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The Final Set of Analyses of Alternative New Source Performance Standards for New Coal-Fired Powerplants

ICF, Inc.
Washington, DC

Prepared for

Environmental Protection Agency
Washington, DC

30 May 79

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THE FINAL SET OF ANALYSES OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR NEW COAL-FIRED POWERPLANTS

DRAFT

June, 1979

Submitted to the
Environmental Protection Agency
and the
Department of Energy

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This report was prepared for the EPA and the Dept. of Energy. The findings of analyses of alternative new source performance standards are presented herein. All the assumptions and scenario specifications employed for the analyses reported in Still Further Analyses of Alternative NSP Standards for NEw Coal-Fided Powerplants wer employeed except: some of the scrubber cost estimated were revised by EPA; EPA developed several new specifications of Alternative standards; and a few forecasts were made to reflect the effect of alternative standrads on emissions after all existing coal-fired capacity is retired.

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INTRODUCTION

This report was prepared for the Environmental Protection Agency (EPA) and the Department of Energy (DOE).

The findings of analyses of alternative new source performance standards are presented herein.

BACKGROUND

These analyses are the fourth in a set of sequential analyses. The first three sets were reported in:

- Effects of Alternative New Source Performance Standards for Coal-Fired Utility Boilers on the Coal Markets and on Utility capacity Expansion Plans (prepared by EPA and DOE by ICF, dated September, 1978, but reporting analyses conducted between October 1977 and April 1978).
- Further Analyses of Alternative New Source Performance Standards for New Coal-Fired Powerplants (prepared for EPA and DOE by ICF, dated September 1978, and reporting analyses conducted between April and September 1978).
- Still Further Analyses of Alternative New Source Performance Standards for New Coal-Fired Powerplants (prepared for EPA and DOE by ICF, dated January 1979, and reporting analyses conducted between September and December 1978).

This report -- The Final Set of Analyses of Alternative New Source Performance Standards for New Coal-Fired Powerplants -- reports analyses conducted between December, 1978 and May, 1979.

CHANGES FROM PREVIOUS ANALYSIS

All the assumptions and scenario specifications employed for the analyses reported in Still Further Analyses of Alternative New Source Performance Standards for New Coal-Fired Powerplants were employed herein, except:

- Some of the scrubber cost estimates were revised by EPA to reflect the costs associated with dry scrubbing (versus wet scrubbing which had been assumed to be the only control technology for previous analyses),
- EPA developed several new specifications of alternative standards, and
- A few forecasts were made for 2010 to reflect the effect of the alternative standards on emissions after all existing coal-fired capacity is retired.

SCRUBBER COSTS

EPA decided to include considerations of "dry scrubbing" in this set of analyses. In previous analyses, all the cost estimates were developed for "wet scrubbing." EPA judges dry scrubbing can achieve up to 70 percent removal on low sulfur coals but has not been demonstrated to work well on high sulfur coals. For low sulfur coals, the cost estimates (provided by EPA) for dry scrubbing are considerably lower than those for wet scrubbing. See Table 1.

TABLE 1

COMPARISON OF SCRUBBER COST ESTIMATES*
(1978 $'s)

	Dry Scrubbing (33% Removal)	Wet Scrubbing (33% Removal)	Dry Scrubbing (70% Removal)	Wet Scrubbing (70% Removal)
Capital ($/kw)	32	50	38	85
O&M (mills/kwh)	1.3	0.8	1.7	1.4
Heat Rate Penalty	0.5	1.0	0.5	2.2
Capacity Penalty	0.5	1.0	0.5	2.2
Annualized Costs**	2.1	2.1	2.6	3.8
Emissions Rate	0.54	0.54	0.24	0.24

---

* On coal with 0.4 pounds of sulfur per million Btu.

** Sixty-five percent annual capacity factor; 12.5 percent capital charge rate.

However, EPA estimates indicate dry scrubbing has about the same annualized costs as wet scrubbing at 33 percent removal. At 70 percent removal dry scrubbing is estimated to be about one-third cheaper (on an annualized cost basis) than wet scrubbing.

These cost estimates for dry scrubbing are the critical set of assumptions leading to the finding that 70 percent removal is more cost-effective than lower percent removals, such as 33 percent. This is because, as shown in Table 1, the emissions drop by over a factor of two when moving from 33 percent to 70 percent, whereas the costs are estimated to increase by less than 25 percent.

ALTERNATIVE STANDARDS

EPA requested that fourteen alternative standards be assessed. These alternatives were specified in terms of:

- alternative ceilings (i.e., maximum emission rates for high sulfur coals),
- alternative scrubber costs (i.e., wet scrubbing versus dry scrubbing), and
- alternative levels of partial or variable scrubbing* for lower sulfur coals, ranging from no partial scrubbing (i.e., full control) to alternative floors (i.e., maximum emission rates for low sulfur coals) to alternative minimum percent removals.

The alternatives that were analyzed are listed on Table 2.

The national emissions and costs in 1995 for each of these standards is presented in Table 3 and plotted on Figure 1.

Other forecast measures for each of these standards is briefly summarized in Appendix A.

The specific emission rates and costs specified by EPA for each coal-type are presented in Appendix B.

A more detailed summary of the forecasts for some of these is presented in Appendix C.

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* EPA refers to a minimum of 70 percent removal as "variable" scrubbing and to 33 percent removal as "partial" scrubbing.

TABLE 2

ALTERNATIVE STANDARDS

	Dry Scrubbing*	Ceiling**	Partial or Variable Scrubbing***
A	Yes	0.8	None -- 90% Removal
B	No	1.0	None -- 90% Removal
C	Yes	0.8	.55 Floor or 50 Percent Minimum Removal
D	Yes	1.0	.55 Floor or 50 Percent Minimum Removal
E	No	1.0	.55 Floor
F	Yes	.55	.55 Floor or 70 Percent Minimum Removal
G	Yes	.55	.55 Floor or 33 Percent Minimum Removal
H	Yes	0.7	70 Percent Minimum Percent Removal
I	Yes	0.7	33 Percent Minimum Percent Removal
J	Yes	0.9	0.50 Floor or 70 Percent Minimum Removal
K	No	1.0	0.50 Floor or 70 Percent Minimum Removal
L	Yes	1.0	0.50 Floor or 70 Percent Minimum Removal
M	Yes	1.0	None -- 90% Removal
N		Not Specified	
O	Yes	1.0	.55 Floor or 33 Percent Minimum Removal

---

* Dry scrubbing specified for lower sulfur coals only; wet scrubbing always assumed for higher sulfur coals.

** Specified in terms of annual average emissions rate; EPA assumes that annual average is about 20 percent lower than a 30-day average maximum limit.

*** Washing credits allowed in all alternatives.

TABLE 3

SUMMARY OF NATIONAL EMISSIONS AND COSTS FOR 1995 OF ALTERNATIVE STANDARDS

Alternative Standard	National Emissions (10^6 tons/year)	National Incremental Annualized Costs ($ 10^9/yr.-1978 $'s)	Increase in Oil Consumption (10^3 barrels per day)	
			Wet[1]	Dry[2]
A	20.70	4.43	450	526
B	20.58	4.10	433	434
C	20.64	2.91	209	285
D	20.64	2.90	209	285
E	20.78	3.18	255	331
F	20.19	3.21	256	332
G	20.57	2.97	211	287
H	20.63	3.15	208	284
I	21.23	2.69	208	284
J	20.45	3.20	210	286
K	20.55	3.64	204	340
L[3]	20.45	3.25	210	286
M[4]	20.72	4.42	480	526
N	-	-	-	-
O	20.85	3.00	207	283

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[1] From base case (1.2 pounds) using wet scrubbing costs, reported in Still Further Analyses of Alternative New Source Performance Standards for New Coal-Fired Powerplants (prepared for EPA and DOE by ICF, dated January 1979) and summarized in Appendix C.

[2] From base case (1.2 pounds) using dry scrubbing costs, summarized in Appendic C and D.

[3] This is alternative EPA selected.

[4] This is alternative EPA had proposed.

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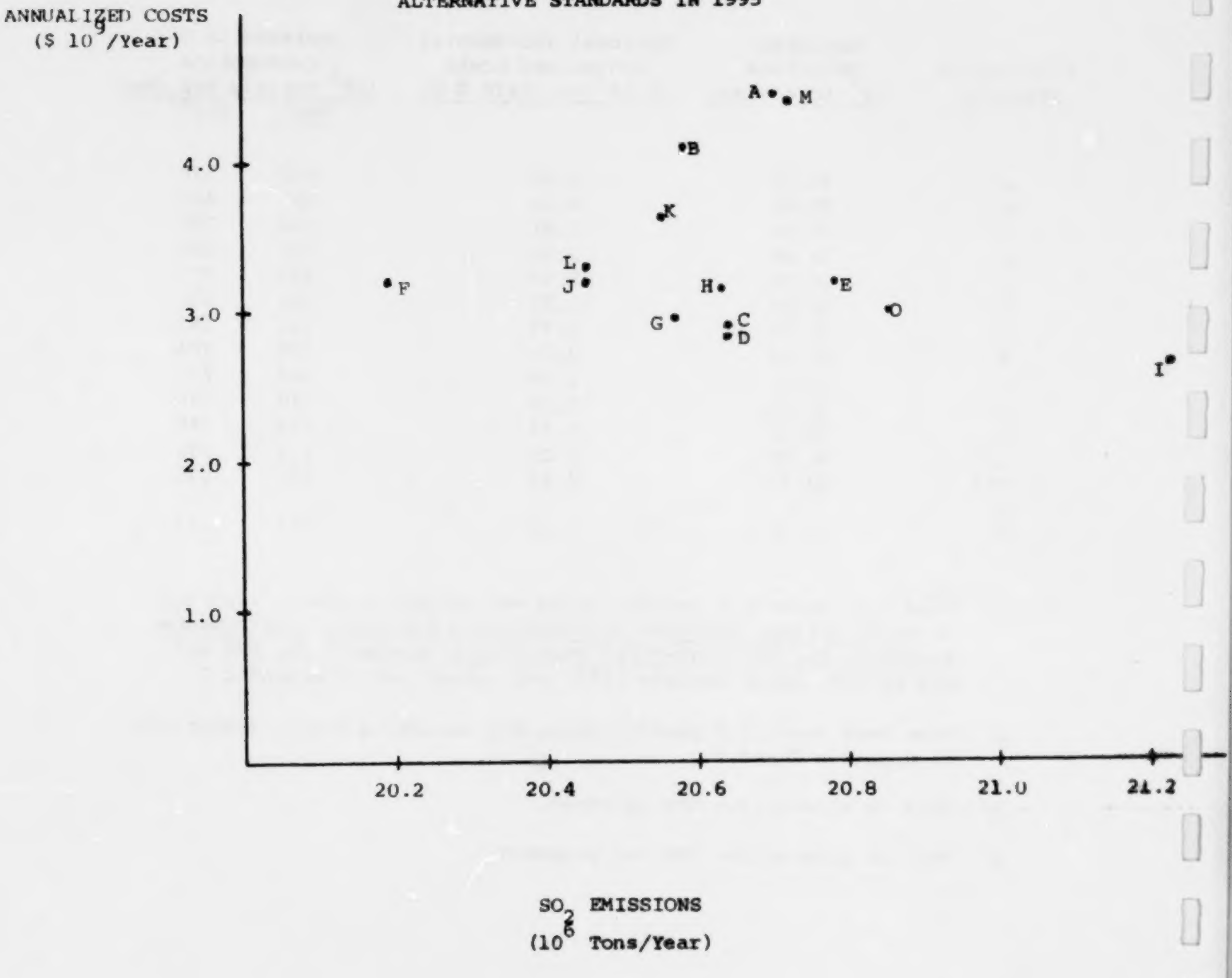
FIGURE 1
NATIONAL EMISSIONS AND COSTS FOR ALTERNATIVE STANDARDS IN 1995



The following general conclusions can be drawn from Table 3 and Figure 1:

- The alternative EPA selected (i.e., L) is amongst those with the lowest estimated increase in oil consumption. The full scrubbing alternatives (i.e., A, B, and M) were estimated to result in approximately double this increase. See Table 3.
- The alternative EPA selected (i.e., L) is one of the most cost-effective. On Figure 1,
    - -- The alternatives to the right and above L are less cost-effective. Both emissions and costs are higher. These are the full scrubbing options (i.e., A, B, M) and a scrubbing option without dry scrubbing (i.e., K).
    - -- The alternatives to the right and below L are slightly less costly, but result in more emissions, particularly the 33 percent removal alternatives (i.e., I).
    - -- The alternative to the left (i.e., F) is more cost-effective on these measures. This alternative has a low ceiling (i.e., .55 pounds of sulfur dioxide per million Btu on an annual average basis versus 1.0 for alternative L). It was not selected because EPA wanted to ensure that a substantial portion of Appalachian and Midwestern high sulfur reserves were not prohibited from the new powerplant market. (EPA is reporting this reserve analysis separately.)
- The "variable" scrubbing options (i.e., 70 percent minimum removal) have lower national emissions than the full scrubbing options. This is because the forecasts indicate "variable" scrubbing with annual emissions rates in the range of .24 to .50 pounds would be substituted for full scrubbing with annual emissions rates in the range of .77 to 1.00.
    - -- Such substitution is forecast to occur East of the Mississippi, where emissions under variable scrubbing (i.e., L) are forecast to be less than under full scrubbing (e.g., M).

-- West of the Mississippi the variable scrubbing also substitutes for full-scrubbing, but the full-scrubbing emission rates are lower (generally in the range of 0.08 to 0.39), resulting in slight increases in forecasted emissions in the West.

-- Full scrubbing emission rates are higher in the East than in the West because the cheapest coals (which would be burned under full scrubbing) are high sulfur coal in the East and low to medium sulfur coals in the West.

- There is essentially no forecasted increase in emissions in increasing the ceiling from 0.9 (i.e., J) to 1.0 (i.e., L) because only raw coals with a sulfur content greater than 4.5 pounds of sulfur per million Btu would be affected, and only a small portion of the high sulfur reserves have a sulfur content greater than 4.5 pounds.

- The effects of the alternative EPA selected on coal production are:

-- reduce Western coal consumed in the East by about one-third or 30 million tons in 1995 from the current standard; increase it by about 15 million tons in 1995 from full control.

-- increase Midwestern production by about 60 million tons, reduce Appalachian production by about 40 million tons (primarily Central Appalachian low sulfur coal), and reduce Western production by about 30 million tons, all relative to the current standard in 1995; relative to full control in 1995, reduce Midwestern production by about 40 million tons, increase Appalachian production by about 20 million tons, and increase Western production by about 10 million tons.

2010 FORECASTS

EPA requested that some forecasts for 2010 be made to assess the magnitude of the differences between alternative standards in 2010 relative to the 1985-1995 period.

The important assumptions for 2010 were specified as follows:

• electricity growth rate (1995-2010)	3.0%
• nuclear capacity (2010)	462.5 GW
• oil price (2010) (1975 $'s)	$23.55/barrel
• non-utility demand growth rates (1995-2010)	
-- industrial	1%
-- metallurgical	1%
-- export	3%
-- residential/commercial	0
-- synthetics	0.3%
• existing coal capacity retirements	All Retired by 2010
• new technologies	None

Also, a lower nuclear capacity forecast was made for 2010, assuming 239.0 GW rather than 462.5 GW.

Three alternative standards were assessed; (a) the current standard, (b) a .55 lbs. $SO_2/10^6$ Btu emission limit using dry scrubbing costs, and (c) a full 90 percent control (with washing credit) requirement with a 0.55 pound ceiling.

The national emissions and costs measures are summarized in Table 4 below, Figure 2 on the next page, and in greater detail in Appendix D:

TABLE 4

FORECASTED NATIONAL EMISSIONS AND
COSTS OF ALTERNATIVE MEASURES

		2010	
	1995	Base Nuclear	Lower Nuclear
Emissions (10^6 tons/yr.)			
Base Case (1.2 lbs.)	23.82	20.80	27.98
.55 lbs. Limit	20.42	10.89	14.20
90% Removal (.55 Ceiling)	19.99	9.26	11.42
Change in Annualized Costs ($\$10^9$/yr.-1978 $'s)			
Base Case (1.2 lbs.)	-	-	-
.55 lbs. Limit	3.04	8.00	10.22
90% Removal (.55 Ceiling)	4.70	14.10	18.94
Change in Annualized Cost Per Ton Removed ($/Ton)			
Base Case (1.2 lbs.)	-	-	-
.55 lb. Limit	895	808	742
90% Removal (.55 Ceiling)	1,227	1,222	1,143

The national emissions drop substantially from 1995 under the two tighter standards. This is because existing powerplants with higher emissions rates are being replaced by new powerplants with lower emissions rates.

The absolute differences (in both emissions and costs) between the two tighter standards grow larger as they are applied to more new powerplant capacity (being built over time and/or in substitution for nuclear). However, the change in annualized cost per ton removed remains relatively constant.

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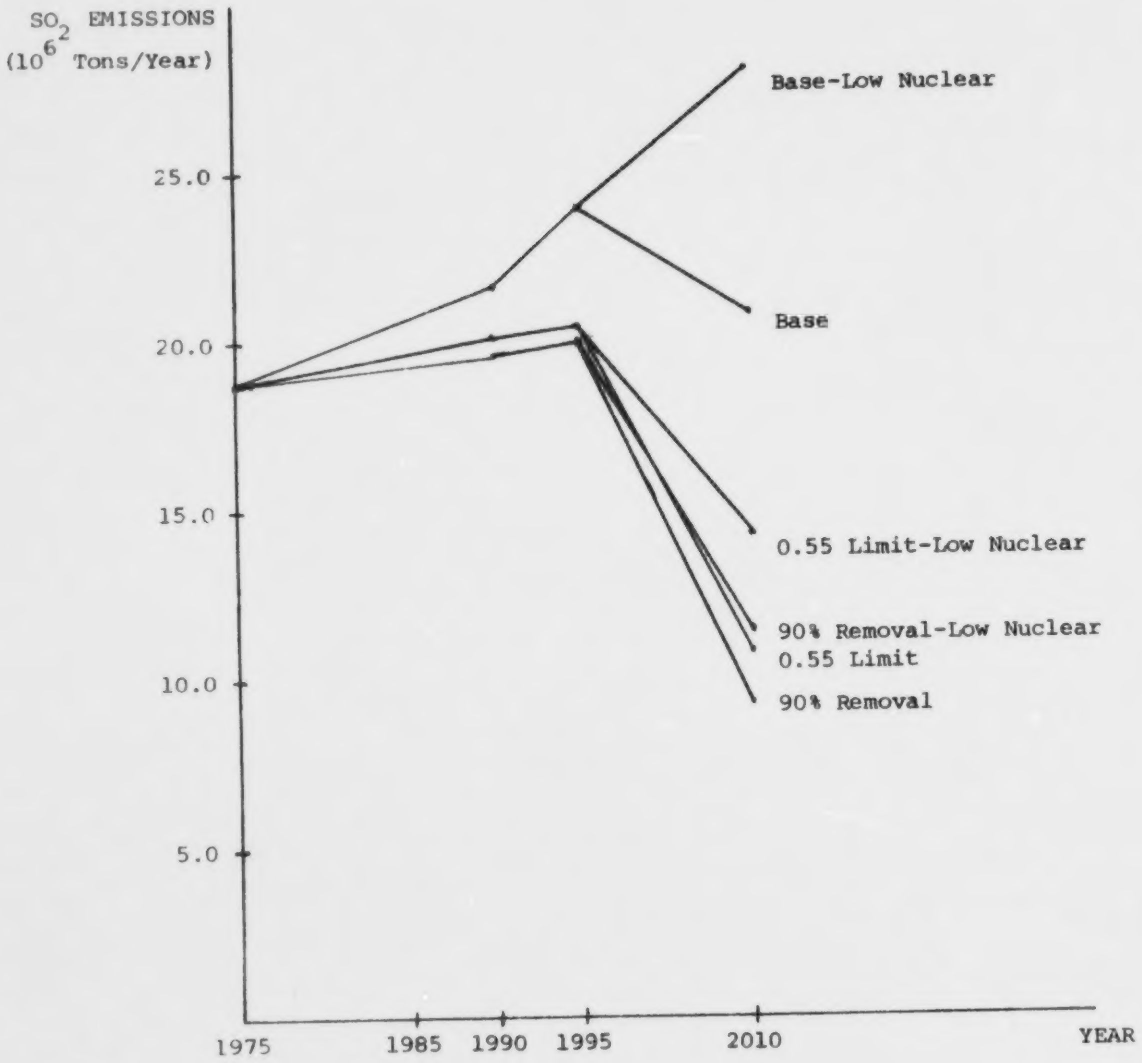
FIGURE 2

NATIONAL EMISSION TRENDS



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THE FINAL SET OF ANALYSES OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR NEW COAL-FIRED POWERPLANTS

APPENDIX A

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SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

	Dry Scrubbing Full Control With Washing Credits and 0.8 lbs. Ceiling (A)			Wet Scrubbing Full Control With Washing Credits and 1.0 lbs. Ceiling (B)			Dry Scrubbing Partial Control; 90% Removal With Washing Credits 0.8 lbs. Ceiling and 0.55 or 50% Floor (C)		
	1985	1990	1995	1985	1990	1995	1985	1990	1995
National SO_2 Emissions (10^6 Tons/Year)									
Oil/Gas	2.57	1.92	1.45	2.58	1.91	1.43	2.55	1.81	1.24
Coal	17.38	18.07	19.25	17.26	18.05	19.15	17.46	18.38	19.41
Existing	14.89	14.41	13.93	14.78	14.39	13.85	14.92	14.56	13.94
NSPS	2.11	2.08	2.24	2.11	2.08	2.16	2.13	2.16	2.19
ANSPS	0.38	1.57	3.08	0.38	1.58	3.14	0.41	1.66	3.28
Total	19.95	19.99	20.70	19.84	19.96	20.58	20.01	20.20	20.64
Present Value of National SO_2 Emissions (10^6 Tons)									
Regional SO_2 Emissions (10^6 Tons/Year)									
East	6.57	6.59	6.96	6.50	6.59	6.90	6.56	6.50	6.65
East North Central	5.62	5.59	5.67	5.63	5.60	5.63	5.62	5.56	5.55
East South Central	2.84	3.01	3.18	2.84	3.02	3.18	2.82	2.98	3.09
West North Central	2.35	2.29	2.27	2.28	2.25	2.24	2.40	2.43	2.43
West South Central	1.72	1.62	1.68	1.73	1.62	1.69	1.74	1.74	1.79
West	0.86	0.89	0.94	0.85	0.89	0.94	0.87	1.00	1.13
Total	19.95	19.99	20.70	19.84	19.96	20.58	20.01	20.20	20.64
National SO_2 Emissions Rate (lbs./10^6 Btu)									
Oil/Gas	0.840	0.827	0.809	0.838	0.829	0.807	0.846	0.854	0.799
Coal	2.207	1.835	1.554	2.190	1.828	1.541	2.208	1.849	1.557
Existing	2.781	2.806	2.889	2.759	2.800	2.875	2.800	2.822	2.925
NSPS	1.119	1.117	1.120	1.117	1.117	1.117	1.118	1.117	1.106
ANSPS	0.598	0.552	0.553	0.640	0.551	0.554	0.601	0.583	0.574
Total	1.824	1.642	1.460	1.811	1.639	1.450	1.832	1.674	1.473
Regional SO_2 Emissions Rate (lbs./10^6 Btu)									
East	1.773	1.679	1.553	1.749	1.661	1.539	1.771	1.659	1.480
East North Central	2.558	2.417	2.267	2.569	2.421	2.248	2.567	2.414	2.245
East South Central	2.299	1.994	1.760	2.298	1.997	1.759	2.322	2.008	1.713
West North Central	2.593	2.262	1.945	2.522	2.227	1.930	2.656	2.492	2.087
West South Central	1.022	0.858	0.740	1.022	0.857	0.739	1.020	0.892	0.807
West	0.706	0.589	0.480	0.703	0.579	0.481	0.721	0.666	0.594
Total	1.824	1.642	1.460	1.811	1.639	1.450	1.832	1.674	1.473
Oil/Gas Consumption (10^{15} Btu/Year)									
Powerplants	6.131	4.649	3.585	6.150	4.620	3.550	6.028	4.244	3.099
Coal Transportation	0.179	0.276	0.349	0.183	0.277	0.352	0.181	0.277	0.353
Total	6.310	4.925	3.934	6.333	4.897	3.902	6.209	4.521	3.452

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

	Dry Scrubbing Full Control With Washing Credits and 0.8 lbs. Ceiling (A)			Wet Scrubbing Full Control With Washing Credits and 1.0 lbs. Ceiling (B)		
	1985	1990	1995	1985	1990	1995
Change in Annualized Cost						
Absolute ($\$10^9$/Year)	0.34	2.25	4.43	0.28	1.93	4.10
Percentage	0.33	1.67	2.55	0.27	1.44	2.38
Change in Present Value of Annualized Costs ($\$10^9$)	4.44	25.55	45.04	3.66	21.93	41.38
Change in Annualized Cost Per Ton Removed (\$/Ton)						
Case Year Basis	843.5	1,325.4	1,421.0	1,011.2	1,269.3	1,322.3
Coal Production (10^6 Tons/Year)						
Appalachia	388.8	401.0	464.9	390.3	399.3	462.8
Midwest	273.1	392.0	487.7	268.9	390.4	486.7
Northern Great Plains	264.9	455.5	627.8	274.0	458.7	632.9
West	162.2	183.9	180.2	158.7	187.7	182.3
Total	1,089.0	1,432.4	1,760.5	1,091.9	1,436.1	1,764.8
Western Coal Consumed in East (10^6 Tons/Year)	60.6	60.6	54.7	62.4	63.3	58.9
Coal-Fired Generation Capacity (GW)	301.8	390.4	520.2	301.2	390.9	521.1
Cumulative Utility Capital Expenditures ($\$10^9$)	275.4	500.4	775.0	276.2	502.2	777.3
Scrubber Capacity (GW)						
Existing	5.7	5.7	5.7	5.7	5.7	5.7
Retrofit	41.8	44.6	44.2	24.3	24.3	24.8
NSPS	31.4	32.7	33.6	29.4	30.3	30.7
ANSPS	23.4	112.0	241.7	23.5	113.2	243.4
Full	23.4	112.0	241.7	23.5	113.2	243.4
Partial (% Removal)	-	-	-	-	-	-
East	-	-	-	-	-	-
East North Central	-	-	-	-	-	-
East South Central	-	-	-	-	-	-
West North Central	-	-	-	-	-	-
West South Central	-	-	-	-	-	-
West	-	-	-	-	-	-
Total	102.3	195.0	325.1	82.8	173.5	304.6
Sludge Generated (10^6 Tons/Year)	17.25	34.45	56.00	16.90	33.22	55.09
Energy Penalty (10^{15} Btu/Year)	0.07	0.32	0.51	0.06	0.26	0.54

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

	Dry Scrubbing Partial Control; 90% Removal With Washing Credits; 0.8lbs. Ceiling and 0.55 or 50% Floor (C)		
	1985	1990	1995
Change in Annualized Cost			
Absolute ($\$10^9$/Year)	0.27	1.40	2.91
Percentage	0.26	1.03	1.67
Change in Present Value of Annualized Costs ($\$10^9$)	3.55	16.04	29.56
Change in Annualized Cost Per Ton Removed ($/Ton)	781.5	946.9	918.4
Coal Production (10^6 Tons/Year)			
Appalachia	391.3	420.7	486.3
Midwest	267.6	370.6	443.7
Northern Great Plains	271.1	433.2	586.6
West	162.0	207.1	227.8
Total	1,092.0	1,431.6	1,744.3
Western Coal Consumed in East (10^6 Tons/Year)	56.7	65.5	72.0
Coal-Fired Generation Capacity (GW)	305.0	401.6	537.3
Cumulative Utility Capital Expenditures ($\$10^9$)	276.2	500.2	767.8
Scrubber Capacity (GW)			
Existing	5.7	5.7	5.7
Retrofit	43.4	45.8	44.9
NSPS	31.9	32.9	35.2
ANSPS	26.6	123.2	258.8
Full	12.6	44.4	82.5
Partial (% Removal)	14.0 (63.3)	78.8 (60.8)	176.3 (58.3)
East	1.8	19.1	48.9
East North Central	0.8	8.4	14.1
East South Central	1.3	7.2	12.3
West North Central	1.8	7.4	17.0
West South Central	3.7	15.1	48.4
West	4.6	21.6	35.7
Total	107.5	207.6	344.6
Sludge Generated (10^6 Tons/Year)	16.22	26.25	37.88
Energy Penalty (10^{15} Btu/Year)	0.04	0.21	0.34

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

	Dry Scrubbing Partial Control 90% Removal With Washing Credits; 1.0 lbs. Ceiling; 0.55 or 50% Floor (D)			Wet Scrubbing Partial Control 90% Removal With Washing Credits 1.0 lb. Ceiling; 0.55 Floor (E)		
	1985	1990	1995	1985	1990	1995
National SO_2 Emissions (10^6 Tons/Year)						
Oil/Gas	2.55	1.82	1.24	2.56	1.85	1.27
Coal	17.44	18.38	19.41	17.42	18.36	19.51
Existing	14.90	14.55	13.93	14.87	14.41	13.81
NSPS	2.13	2.16	2.19	2.11	2.08	2.10
ANSPS	0.41	1.67	3.28	0.44	1.87	3.60
Total	19.99	20.20	20.64	19.98	20.21	20.78
Present Value of National SO_2 Emissions (10^6 Tons)						
Regional SO_2 Emissions Rate (10^6 Tons/Year)						
East	6.56	6.50	6.65	6.47	6.48	6.69
East North Central	5.61	5.56	5.54	5.63	5.56	5.48
East South Central	2.82	2.98	3.09	2.84	3.02	3.13
West North Central	2.39	2.43	2.43	2.41	2.37	2.42
West South Central	1.74	1.74	1.79	1.74	1.74	1.83
West	0.87	1.01	1.13	0.88	1.03	1.23
Total	19.99	20.20	20.64	19.98	20.21	20.78
National SO_2 Emissions Rate (lbs./10^6 Btu)						
Oil/Gas	0.846	0.858	0.799	0.842	0.854	0.802
Coal	2.205	1.848	1.557	2.202	1.842	1.557
Existing	2.796	2.820	2.924	2.792	2.840	2.913
NSPS	1.120	1.117	1.106	1.113	1.115	1.117
ANSPS	0.601	0.585	0.574	0.640	0.617	0.609
Total	1.830	1.674	1.473	1.824	1.666	1.472
Regional SO_2 Emissions Rate (lbs./10^6 Btu)						
East	1.656	1.659	1.495	1.744	1.657	1.493
East North Central	2.562	2.410	2.243	2.568	2.436	2.248
East South Central	2.322	2.008	1.713	2.303	2.000	1.727
West North Central	2.645	2.493	2.087	2.656	2.296	1.981
West South Central	1.020	0.921	0.807	1.029	0.925	0.818
West	0.723	0.670	0.595	0.724	0.685	0.636
Total	1.830	1.674	1.473	1.824	1.666	1.472
Oil/Gas Consumption (10^{15} Btu/Year)						
Powerplants	6.028	4.244	3.099	6.079	4.333	3.181
Coal Transportation	0.181	0.277	0.354	0.184	0.281	0.364
Total	6.209	4.521	3.453	6.263	4.614	3.545

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

	Dry Scrubbing Partial Control 90% Removal With Washing Credits; 1.0 lbs. Ceiling; 0.55 or 50% Floor (D)			Wet Scrubbing Partial Control 90% Removal With Washing Credits: 1.0 lbs. Ceiling; 0.55 Floor (E)		
	1985	1990	1995	1985	1990	1995
Change in Annualized Cost						
Absolute ($$10^9$/Year)	0.27	1.41	2.90	0.23	1.38	3.18
Percentage	0.26	1.04	1.67	0.21	1.01	1.85
Change in Present Value of Annualized Costs ($$10^9$)	3.55	16.14	29.48	3.00	15.74	31.85
Change in Annualized Cost Per Ton Removed ($/Ton)						
Case Year Basis	742.9	951.0	913.8	1,625.0	1,079.5	1,094.4
Coal Production (10^6 Tons/Year)						
Appalachia	391.3	420.7	486.2	388.4	407.0	475.2
Midwest	267.6	370.6	443.7	268.8	382.9	456.0
Northern Great Plains	271.1	433.2	587.6	276.0	453.5	621.8
West	162.0	207.0	227.1	161.8	199.2	211.6
Total	1,092.0	1,431.5	1,744.6	1,095.1	1,442.6	1,764.6
Western Coal Consumed in East (10^6 Tons/Year)	56.7	65.5	72.0	61.7	60.0	68.2
Coal-Fired Generation Capacity (GW)	305.0	401.6	537.2	303.2	398.6	534.1
Cumulative Utility Capital Expenditures ($$10^9$)	276.2	500.1	767.8	277.1	505.2	779.1
Scrubber Capacity (GW)						
Existing	5.7	5.7	5.7	5.7	5.7	5.7
Retrofit	43.4	45.9	44.9	24.2	24.5	24.7
NSPS	31.9	32.9	35.2	29.4	30.1	30.4
ANSPS	26.6	123.2	258.8	25.7	121.1	256.6
Full	12.6	44.4	82.4	18.3	72.6	151.2
Partial (% Removal)	14.0 (63.1)	78.8 (60.9)	176.4 (58.3)	7.4 (49.8)	48.5 (46.0)	105.4 (42.4)
East	1.8	19.1	48.9	-	3.0	1.0
East North Central	0.8	8.4	14.2	-	-	1.6
East South Central	1.3	7.2	12.3	-	1.9	6.0
West North Central	1.8	7.4	17.0	1.3	9.4	18.7
West South Central	3.7	15.1	48.4	1.9	14.1	48.2
West	4.6	21.6	35.7	4.2	20.1	29.8
Total	107.5	207.7	344.5	85.1	181.3	317.4
Sludge Generated (10^6 Tons/Year)	16.22	26.27	37.88	16.45	28.06	42.71
Energy Penalty (10^{15} Btu/Year)	0.03	0.11	0.17	0.05	0.16	0.38

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

	Dry Scrubbing 70% Minimum Removal Requirement and 0.55 lbs. SO$_2$/MMBtu Limit (F)		
	1985	1990	1995
National SO$_2$ Emissions (10^6 Tons/Year)			
Oil/Gas	2.56	1.82	1.24
Coal	17.50	18.20	18.95
Existing	15.04	14.61	13.95
NSPS	2.17	2.24	2.30
ANSPS	0.29	1.35	2.71
Total	20.06	20.02	20.19
Present Value of National SO$_2$ Emissions (10^6 Tons)			
Regional SO$_2$ Emissions (10^6 Tons/Year)			
East	6.54	6.45	6.54
East North Central	5.65	5.56	5.46
East South Central	2.81	2.86	2.96
West North Central	2.45	2.46	2.45
West South Central	1.73	1.71	1.71
West	0.88	0.97	1.06
Total	20.06	20.02	20.19
National SO$_2$ Emissions Rate (lbs./10^6 Btu)			
Oil/Gas	0.841	0.857	0.798
Coal	2.219	1.830	1.520
Existing	2.809	2.833	2.926
NSPS	1.120	1.120	1.120
ANSPS	0.486	0.485	0.479
Total	1.835	1.659	1.441
Regional SO$_2$ Emissions Rate (lbs./10^6 Btu)			
East	1.767	1.638	1.472
East North Central	2.575	2.409	2.209
East South Central	2.304	1.963	1.637
West North Central	2.705	2.524	2.103
West South Central	1.018	0.905	0.770
West	0.728	0.420	0.558
Total	1.835	1.659	1.441
Oil/Gas Consumption (10^{15} Btu/Year)			
Powerplants	6.083	4.250	3.100
Coal Transportation	0.101	0.276	0.356
Total	6.184	4.526	3.456

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

	Dry Scrubbing 70% Minimum Removal Requirement and 0.55 lbs. SO$_2$/MMBtu Limit (F)		
	1985	1990	1995
Change in Annualized Cost			
Absolute ($$10^9$/Year)	0.25	1.75	3.21
Percentage	0.24	1.29	1.86
Change in Present Value of Annualized Costs ($$10^9$)	3.21	19.79	32.94
Change in Annualized Cost Per Ton Removed ($/Ton)			
Case Year Basis	821.6	1,048.6	886.0
Coal Production (10^6 Tons/Year)			
Appalachia	388.6	424.8	484.6
Midwest	267.8	365.8	444.3
Northern Great Plains	271.0	433.8	602.4
West	162.9	206.8	218.0
Total	1,090.2	1,431.2	1,749.2
Western Coal Consumed in East (10^6 Tons/Year)	58.1	65.8	74.0
Coal-Fired Generation Capacity (GW)	303.5	401.5	537.1
Cumulative Utility Capital Expenditures ($$10^9$)	275.3	500.6	768.9
Scrubber Capacity (GW)			
Existing	5.7	5.7	5.7
Retrofit	45.0	47.9	48.4
NSPS	31.8	32.3	32.8
ANSPS	25.1	123.1	258.7
Full	8.6	40.4	72.1
Partial (% Removal)	16.6 (70.5)	82.7 (70.2)	186.6 (70.2)
East	4.2	22.3	53.3
East North Central	0.6	9.0	14.8
East South Central	1.9	7.2	13.0
West North Central	1.3	7.5	17.0
West South Central	3.7	15.0	48.4
West	4.8	21.8	38.8
Total	107.6	209.0	345.6
Sludge Generated (10^6 Tons/Year)	15.92	26.60	39.25
Energy Penalty (10^{15} Btu/Year)	0.05	0.12	0.17

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS IN 1995

	Dry Scrubbing 0.55Lbs. SO_2/MMbtu Annual EMISSION LIMITATION, 33% Minimum Removal (G)	Dry Scrubbing 90% Removal With Washing Credits, 0.7 lb. Ceiling and 70% Minimum Removal (H)	Dry Scrubbing 90% Removal With Washing Credits, 0.7 lb. Ceiling and 33% Minimum Removal (I)
National SO_2 Emissions (10^6 Tons/Year)			
Oil/Gas	1.24	1.24	1.24
Coal	19.33	19.39	19.99
Existing	14.06	13.94	13.96
NSPS	2.24	2.18	2.19
ANSPS	3.03	3.27	3.84
Total	20.57	20.63	21.23
Present Value of National SO_2 Emissions (10^6 Tons)			
Regional SO_2 Emissions (10^6 Tons/Year)			
East	6.56	6.67	6.81
East North Central	5.52	5.53	5.56
East South Central	2.97	3.07	3.10
West North Central	2.49	2.44	2.50
West South Central	1.81	1.81	1.99
West	1.21	1.09	1.27
Total	20.57	20.53	21.23
National SO_2 Emissions Rate (lbs./10^6 Btu)			
Oil/Gas	0.799	0.799	0.799
Coal	1.551	1.554	1.604
Existing	2.922	2.931	2.931
NSPS	1.120	1.116	1.119
ANSPS	0.536	0.567	0.669
Total	1.467	1.470	1.515
Regional SO_2 Emissions Rate (lbs./10^6 Btu)			
East	1.475	1.499	1.531
East North Central	2.234	2.221	2.252
East South Central	1.641	1.701	1.718
West North Central	2.135	2.131	2.145
West South Central	0.820	0.813	0.897
West	0.633	0.572	0.663
Total	1.467	1.470	1.515
Oil/Gas Consumption (10^{15} Btu/Year)			
Powerplants	3.102	3.099	3.099
Coal Transportation	0.355	0.351	0.351
Total	3.457	3.450	3.450

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS IN 1995

	Dry Scrubbing 0.55 Lbs. SO_2/MMBtu Annual EMISSION LIMITATION, 33% Minimum Removal (G)	Dry Scrubbing 90% Removal With Washing Credits, 0.7 lb. Ceiling and 70% Minimum Removal (H)	Dry Scrubbing 90% Removal With Washing Credits, 0.7 lb. Ceiling and 33% Minimum Removal (I)
Change in Annualized Cost			
Absolute ($\$10^9$/Year)	2.97	3.15	2.69
Percentage	1.71	1.82	1.56
Change in Present Value of Annualized Costs ($\$10^9$)			
Change in Annualized Cost Per Ton Removed ($/Ton)			
Case Year Basis	915.8	988.0	1,040.5
Coal Production (10^6 Tons/Year)			
Appalachia	483.4	490.5	489.2
Midwest	444.5	442.2	442.1
Northern Great Plains	592.5	600.6	588.0
West	225.1	217.4	224.6
Total	1,745.6	1,750.7	1,743.8
Western Coal Consumed in East (10^6 Tons/Year)	74.8	71.3	69.4
Coal-Fired Generation Capacity (GW)	537.1	537.1	537.1
Cumulative Utility Capital Expenditures ($\$10^9$)	767.9	770.6	768.2
Scrubber Capacity (GW)			
Existing	5.7	5.7	5.7
Retrofit	50.4	43.3	46.4
NSPS	35.0	32.7	34.3
ANSPS	258.7	258.7	258.7
Full	75.7	47.5	45.9
Partial (% Removal)	183.0 (53.3)	211.2 (72.5)	212.8 (51.3)
East	51.8	70.9	71.0
East North Central	16.7	14.7	14.5
East South Central	12.4	15.6	16.7
West North Central	17.0	16.2	17.0
West South Central	48.4	57.3	57.3
West	36.8	36.4	36.4
Total	349.8	340.3	345.0
Sludge Generated (10^6 Tons/Year)	36.53	42.15	37.13
Energy Penalty (10^{15} Btu/Year)	0.18	0.20	0.16

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

	Dry Scrubbing 90% Removal With Washing Credits, 0.9 lbs. SO_2/MMBtu Ceiling, 0.55 lbs. SO_2/MMBtu Floor, 70% Minimum Removal Requirement (J)		
	1985	1990	1995
National SO_2 Emissions (10^6 Tons/Year)			
Oil/Gas	2.55	1.82	1.24
Coal	17.46	18.33	19.22
Existing	14.95	14.58	13.95
NSPS	2.13	2.16	2.19
ANSPS	0.38	1.59	3.08
Total	20.01	20.15	20.45
Present Value of National SO_2 Emissions (10^6 Tons)			
Regional SO_2 Emissions (10^6 Tons/Year)			
East	6.56	6.51	6.64
East North Central	5.57	5.55	5.53
East South Central	2.82	2.97	3.08
West North Central	2.45	2.45	2.44
West South Central	1.73	1.70	1.70
West	0.88	0.97	1.06
Total	20.01	20.15	20.45
National SO_2 Emissions Rate (lbs./10^6 Btu)			
Oil/Gas	0.845	0.857	0.799
Coal	2.208	1.843	1.541
Existing	2.802	2.825	2.924
NSPS	1.118	1.117	1.116
ANSPS	0.671	0.556	0.537
Total	1.832	1.669	1.459
Regional SO_2 Emissions Rate (lbs./10^6 Btu)			
East	1.749	1.663	1.492
East North Central	2.543	2.406	2.238
East South Central	2.324	2.005	1.706
West North Central	2.709	2.512	2.092
West South Central	1.015	0.900	0.766
West	0.725	0.644	0.557
Total	1.832	1.669	1.459
Oil/Gas (10^{15} Btu/Year)			
Powerplants	6.039	4.249	3.099
Coal Transportation	0.181	0.276	0.355
Total	6.220	4.525	3.454

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

	Dry Scrubbing 90% Removal With Washing Credits, 0.9 lbs. SO_2/MMBtu Ceiling, 0.55 lbs. SO_2/MMBtu Floor, 70% Minimum Removal Requirement (J)		
	1985	1990	1995
Change in Annualized Cost			
Absolute ($$10^9$/Year)	0.29	1.62	3.20
Percentage	0.27	1.19	1.84
Change in Present Value of Annualized Costs ($$10^9$)	3.76	18.44	32.59
Change in Annualized Cost Per Ton Removed ($/Ton)			
Case Year Basis	828.3	1,053.7	950.3
Coal Production (10^6 Tons/Year)			
Appalachia	390.9	420.8	481.9
Midwest	267.6	372.8	448.7
Northern Great Plains	270.2	432.0	601.3
West	162.9	205.9	218.2
Total	1,091.6	1,431.4	1,750.1
Western Coal Consumed in East (10^6 Tons/Year)	57.6	63.7	72.0
Coal-Fired Generation Capacity (GW)	304.5	401.5	537.2
Cumulative Utility Capital Expenditures ($$10^9$)	276.0	500.6	769.1
Scrubber Capacity (GW)			
Existing	5.7	5.7	5.7
Retrofit	42.1	52.3	50.9
NSPS	31.9	32.9	33.9
ANSPS	26.0	123.1	258.8
Full	12.6	45.8	82.3
Partial (% Removal)	13.4 (70.5)	77.3 (70.2)	176.5 (70.0)
East	1.8	17.8	48.2
East North Central	0.6	8.2	13.4
East South Central	1.3	7.2	13.0
West North Central	1.3	7.5	17.0
West South Central	3.7	15.0	48.4
West	4.6	21.6	36.5
Total	105.8	206.4	341.7
Sludge Generated (10^6 Tons/Year)	16.29	27.79	40.82
Energy Penalty (10^{15} Btu/Year)	0.04	0.12	0.17

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

	Wet Scrubbing 90% Removal With Washing Credit; 1.0 lb. Ceiling; 0.5 lb. Floor; 70% Minimum Removal Requirement (K)		Dry Scrubbing 90% Removal With Washing Credit; 1.0 lb. Ceiling; 0.5 lb. Floor; 70% Minimum Removal Requirement (L)	
	1990	1995	1990	1995
National SO_2 Emissions (10^6 Tons/Year)				
Oil/Gas	1.86	1.28	1.82	1.24
Coal	18.28	19.27	18.31	19.21
Existing	14.47	13.88	14.60	13.95
NSPS	2.08	2.08	2.14	2.19
ANSPS	1.74	3.31	1.56	3.07
Total	20.14	20.55	20.13	20.45
Present Value of National SO_2 Emissions (10^6 Tons)				
Regional SO_2 Emissions (10^6 Tons/Year)				
East	6.50	6.66	6.48	6.62
East North Central	5.59	5.63	5.55	5.53
East South Central	3.02	3.12	2.97	3.09
West North Central	2.33	2.31	2.45	2.44
West South Central	1.72	1.75	1.70	1.70
West	0.98	1.09	0.97	1.06
Total	20.14	20.55	20.13	20.45
National SO_2 Emissions Rate (lbs./10^6 Btu)				
Oil/Gas	0.851	0.800	0.857	0.799
Coal	1.836	1.536	1.839	1.539
Existing	2.838	2.912	2.828	2.925
NSPS	1.113	1.114	1.116	1.115
ANSPS	0.582	0.559	0.545	0.534
Total	1.659	1.452	1.667	1.457
Regional SO_2 Emissions Rate (lbs./10^6 Btu)				
East	1.662	1.482	1.654	1.485
East North Central	2.417	2.265	2.406	2.236
East South Central	1.999	1.722	2.005	1.711
West North Central	2.319	1.954	2.506	2.092
West South Central	0.910	0.775	0.900	0.766
West	0.648	0.561	0.648	0.557
Total	1.659	1.452	1.667	1.457
Oil/Gas Consumption (10^{15} Btu/Year)				
Powerplants	4.376	3.206	4.249	3.099
Coal Transportation	0.277	0.356	0.276	0.355
Total	4.653	3.562	4.525	3.454

SUMMARY OF FORECATED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

	Wet Scrubbing 90% Removal With Washing Credit; 1.0 lb. Ceiling; 0.5 lb. Floor; 70% Minimum Removal Requirement (K)		Dry Scrubbing 90% Removal With Washing Credit; 1.0 lb. Ceiling; 0.5 lb. Floor; 70% Minimum Removal Requirement (L)	
	1990	1995	1990	1995
Change in Annualized Cost				
Absolute ($\$10^9$/Year)	1.69	3.64	1.65	3.25
Percentage	1.25	2.13	1.21	1.87
Change in Present Value of Annualized Costs ($\$10^9$)	19.16	36.71	18.79	33.15
Change in Annualized Cost Per Ton Removed (\$/Ton)				
Case Year Basis	1,254.6	1,163.0	1,059.5	1,035.7
Coal Production (10^6 Tons/Year)				
Appalachia	405.1	470.3	421.3	483.5
Midwest	390.1	465.2	373.5	449.8
Northern Great Plains	455.2	631.9	432.2	601.7
West	191.6	202.8	205.8	216.8
Total	1,442.0	1,770.2	1,432.8	1,751.8
Western Coal Consumed in East (10^6 Tons/Year)	61.9	71.2	63.4	69.6
Coal-Fired Generation Capacity (GW)	396.8	532.9	401.5	537.2
Cumulative Utility Capital Expenditures ($\$10^9$)	506.9	782.6	500.6	769.2
Scrubber Capacity (GW)				
Existing	5.7	5.7	5.7	5.7
Retrofit	23.1	23.4	44.4	43.1
NSPS	29.9	29.9	32.6	33.9
ANSPS	119.4	255.4	123.1	258.8
Full	91.2	186.2	46.7	84.9
Partial (% Removal)	28.1 (70.8)	69.2 (70.3)	76.4 (70.2)	173.8 (70.0)
East	-	-	17.0	48.1
East North Central	-	-	8.0	13.6
East South Central	0.1	5.3	7.2	10.9
West North Central	3.3	5.2	7.5	17.0
West South Central	8.8	34.2	15.0	48.4
West	15.9	24.5	21.6	35.9
Total	178.1	314.4	205.8	341.5
Sludge Generated (10^6 Tons/Year)	31.27	49.67	27.58	40.88
Energy Penalty (10^{15} Btu/Year)	0.18	0.34	0.14	0.21

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

	Dry Scrubbing 90% Removal With Washing Credits; 1.0 lb. Ceiling (M)		Dry Scrubbing 90% Removal With Washing Credits; 1.0 lb. Ceiling, 0.55 lb. Floor; 33% Minimum Removal (O)	
	1990	1995	1990	1995
National SO_2 Emissions (10^6 Tons/Year)				
Oil/Gas	1.92	1.45	1.82	1.24
Coal	18.12	19.27	18.49	19.61
Existing	14.47	13.94	14.63	13.98
NSPS	2.09	2.25	2.14	2.23
ANSPS	1.57	3.08	1.72	3.41
Total	20.04	20.72	20.31	20.85
Present Value of National SO_2 Emissions (10^6 Tons)				
Regional SO_2 Emissions (10^6 Tons/Year)				
East	6.59	6.96	6.55	6.72
East North Central	5.59	5.67	5.55	5.54
East South Central	3.01	3.18	2.98	3.12
West North Central	2.33	2.27	2.47	2.47
West South Central	1.62	1.68	1.74	1.80
West	0.90	0.96	1.04	1.20
Total	20.04	20.72	20.31	20.85
National SO_2 Emissions Rate (lbs./10^6 Btu)				
Oil/Gas	0.827	0.809	0.858	0.799
Coal	1.841	1.555	1.857	1.557
Existing	2.817	2.891	2.827	2.907
NSPS	1.118	1.120	1.120	1.120
ANSPS	0.552	0.553	0.598	0.600
Total	1.647	1.461	1.682	1.487
Regional SO_2 Emissions Rate (lbs./10^6 Btu)				
East	1.682	1.555	1.671	1.509
East North Central	2.416	2.266	2.405	2.242
East South Central	1.994	1.760	2.007	1.731
West North Central	2.298	1.944	2.531	2.113
West South Central	0.858	0.726	0.918	0.810
West	0.592	0.345	0.689	0.629
Total	1.647	1.461	1.682	1.487
Oil/Gas Consumption (10^{15} Btu/Year)				
Powerplants	4.649	3.585	4.238	3.099
Coal Transportation	0.276	0.349	0.279	0.350
Total	4.925	3.934	4.517	3.449

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

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	Dry Scrubbing 90% Removal With Washing Credits; 1.0 lb. Ceiling (M)		Dry Scrubbing 90% Removal With Washing Credits; 1.0 lb. Ceiling, 0.55 lb. Floor; 33% Minimum Removal (O)	
	1990	1995	1990	1995
Change in Annualized Cost				
Absolute ($$10^9$/Year)	2.25	4.42	1.43	3.00
Percentage	1.67	2.55	1.05	1.72
Change in Present Value of Annualized Costs ($$10^9$)	25.54	45.00	16.36	30.45
Change in Annualized Cost Per Ton Removed ($/Ton)				
Case Year Basis	1,370.8	1,427.5	1,040.7	1,011.7
Coal Production (10^6 Tons/Year)				
Appalachia	401.0	464.9	418.8	486.1
Midwest	392.2	487.7	372.4	452.7
Northern Great Plains	455.6	627.7	434.8	575.7
West	183.8	180.2	205.2	227.6
Total	1,432.5	1,760.5	1,431.2	1,742.1
Western Coal Consumed in East (10^6 Tons/Year)	60.5	54.7	65.3	59.1
Coal-Fired Generation Capacity (GW)	390.4	520.2	401.9	537.3
Cumulative Utility Capital Expenditures ($$10^9$)	501.2	775.0	467.6	767.2
Scrubber Capacity (GW)				
Existing	5.7	5.7	5.7	5.7
Retrofit	44.6	44.2	46.7	45.6
NSPS	32.8	33.6	33.2	35.2
ANSPS	112.0	241.7	123.4	258.8
Full	112.0	241.7	43.4	77.6
Partial (% Removal)	-	-	80.0 (58.9)	181.3 (55.5)
East	-	-	20.5	51.7
East North Central	-	-	8.2	14.7
East South Central	-	-	6.3	12.3
West North Central	-	-	7.4	17.0
West South Central	-	-	15.8	49.1
West	-	-	21.9	36.5
Total	195.1	325.1	209.0	345.3
Sludge Generated (10^6 Tons/Year)	34.46	56.00	26.55	38.71
Energy Penalty (10^{15} Btu/Year)	0.32	0.51	0.13	0.19

DRAFT
May 30, 1979

THE FINAL SET OF ANALYSES OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR NEW COAL-FIRED POWERPLANTS

APPENDIX B

COST AND EMISSION RATE SPECIFICATIONS OF ALTERNATIVES

ICF INCORPORATED

DRAFT
May 30, 1979

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SO_2 SCRUBBER COST ESTIMATES
DRY SCRUBBING; 90 PERCENT REMOVAL WITH WASHING CREDITS; 0.8 LBS. SO_2/MMBTU CEILING
(A)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.08	0.12	0.17	0.39	0.77	0.80
B. Percent Annual SO_2 Removed	90	90	90	88	85	88
C. Percent of Gas Treated	100	100	100	98	94	98
D. Daily SO_2 Removed (lbs./10^6 Btu)	0.99	1.48	2.05	4.02	5.79	8.04
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.72	1.08	1.50	2.94	4.23	5.80
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber	105.00	105.60	106.10	106.60	105.10	109.30
2. Sludge Pond	2.00	2.40	2.75	3.90	4.85	5.95
3. Total	107.00	108.00	108.85	110.50	109.85	115.25
B. O&M (Mills/KWH)	1.75	1.85	1.92	2.40	2.36	2.75
C. Capacity Penalty (%)	2.75	2.75	2.75	2.68	2.60	2.68
D. Energy Penalty (%)	4.35	4.35	4.35	4.30	3.75	4.30

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
WET SCRUBBING; 90 PERCENT REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
(B)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.08	0.12	0.17	0.39	0.77	1.00
B. Percent Annual SO_2 Removed	90	90	90	88	85	85
C. Percent of Gas Treated	100	100	100	98	94	94
D. Daily SO_2 Removed (lbs./10^6 Btu)	0.99	1.48	2.05	4.02	5.79	7.6
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.72	1.08	1.50	2.94	4.23	5.6
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber	105.00	105.60	106.10	106.60	105.10	106.00
2. Sludge Pond	2.00	2.40	2.75	3.90	4.85	5.80
3. Total	107.00	108.00	108.85	110.50	109.85	111.80
B. O&M (Mills/KWH)	1.75	1.85	1.92	2.40	2.36	2.65
C. Capacity Penalty (%)	2.75	2.75	2.75	2.68	2.60	2.65
D. Energy Penalty (%)	4.35	4.35	4.35	4.30	3.75	3.80

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
DRY SCRUBBING; 90 PERCENT REMOVAL WITH WASHING CREDITS; 0.8 LBS. SO_2/MMBTU CEILING; 0.55 OR 50 PERCENT FLOOR
(C)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.40	0.54	0.54	0.54	0.77	0.80
B. Percent Annual SO_2 Removed	50	55	67	84	85	88
C. Percent of Gas Treated	100	100	100	93	94	98
D. Daily SO_2 Removed (lbs./10^6 Btu)				3.82	5.79	8.04
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.40	0.66	1.12	2.79	4.23	5.80
F. Stoicheimestic Ratio	1.5	1.5	2.0	-	-	-
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber				96.10	105.10	109.30
2. Sludge Pond				3.65	4.85	5.95
3. Total	32.13	32.13	38.48	99.75	109.85	115.25
B. O&M (Mills/KWH)	1.20	1.27	1.67	2.04	2.36	2.75
C. Capacity Penalty (%)	0.50	0.50	0.50	2.60	2.60	2.68
D. Energy Penalty (%)	-	-	-	3.75	3.75	4.30

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
DRY SCRUBBING; 90 PERCENT REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 OR 50 PERCENT FLOOR
(D)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.40	0.54	0.54	0.54	0.77	1.00
B. Percent Annual SO_2 Removed	50	55	67	84	85	85
C. Percent of Gas Treated	100	100	100	93	94	94
D. Daily SO_2 Removed (lbs./10^6 Btu)				3.82	5.79	7.60
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.40	0.66	1.12	2.79	4.23	5.60
F. Stoicheimestic Ratio	1.5	1.5	2.0	-	-	-
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber				96.10	105.10	106.00
2. Sludge Pond				3.65	4.85	5.80
3. Total	32.13	32.13	38.48	99.75	109.85	111.80
B. O&M (Mills/KWH)	1.20	1.27	1.67	2.04	2.36	2.65
C. Capacity Penalty (%)	0.50	0.50	0.50	2.60	2.60	2.65
D. Energy Penalty (%)	-	-	-	3.75	3.75	3.80

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
WET SCRUBBING; 90 PERCENT REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR
(E)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.54	0.54	0.54	0.54	0.77	1.00
B. Percent Annual SO_2 Removed	33	55	67	84	85	85
C. Percent of Gas Treated	36	61	75	93	94	94
D. Daily SO_2 Removed (lbs./10^6 Btu)	0.35	0.90	1.53	3.82	5.79	7.60
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.26	0.66	1.12	2.79	4.23	5.60
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber	49.00	70.00	79.80	96.10	105.10	106.00
2. Sludge Pond	0.85	1.60	2.00	3.65	4.85	5.80
3. Total	49.85	71.60	81.80	99.75	109.85	111.80
B. O&M (Mills/KWH)	0.77	1.20	1.42	2.04	2.36	2.65
C. Capacity Penalty (%)	0.99	1.53	2.08	2.60	2.60	2.65
D. Energy Penalty (%)	0.99	1.53	2.30	3.75	3.75	3.80

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
DRY SCRUBBING; 0.55 LBS. SO_2/MMBTU ANNUAL EMISSION LIMITATION; 70 PERCENT MINIMUM REMOVAL REQUIREMENT
(F)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.24	0.36	0.50	0.54	0.54	-
B. Percent Annual SO_2 Removed	70	70	70	84	89	-
C. Percent of Gas Treated	100	100	100	93	99	-
D. Daily SO_2 Removed (lbs./10^6 Btu)				3.82	6.09	-
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.56	0.84	1.16	2.79	4.46	-
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber				96.10	108.10	-
2. Sludge Pond				3.65	5.20	-
3. Total	38.48	38.48	38.48	99.75	113.30	-
B. O&M (Mills/KWH)	1.67	1.67	1.67	2.04	2.50	-
C. Capacity Penalty (%)	0.50	0.50	0.50	2.60	2.65	-
D. Energy Penalty (%)	-	-	-	3.75	4.32	-

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
DRY SCRUBBING; 0.55 LBS. SO_2/MMBTU ANNUAL EMISSION LIMITATION; 33 PERCENT MINIMUM REMOVAL REQUIREMENT
(G)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.54	0.54	0.54	0.54	0.54	-
B. Percent Annual SO_2 Removed	33	55	67	84	89	-
C. Percent of Gas Treated	36	100	100	93	99	-
D. Daily SO_2 Removed (lbs./10^6 Btu)	0.35	0.90	1.53	3.82	6.09	-
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.26	0.66	1.12	2.79	4.46	-
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber				96.10	108.10	-
2. Sludge Pond				3.65	5.20	-
3. Total	32.13	32.13	38.48	99.75	113.30	-
B. O&M (Mills/KWH)	1.15	1.27	1.69	2.04	2.50	-
C. Capacity Penalty (%)	0.50	0.50	0.50	2.60	2.65	-
D. Energy Penalty (%)	-	-	-	3.75	4.32	-

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES DRY SCRUBBING; 0.7 LBS. SO_2/MMBTU CEILING; 70 PERCENT MINIMUM REMOVAL REQUIREMENT
(H)

Scenario Specifications	$SO_2/10^6$ Btu (Long-Term Average)					
	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.24	0.36	0.50	0.70	0.70	0.70
B. Percent Annual SO_2 Removed	70	70	70	79	86	89
C. Percent of Gas Treated	100	100	100	88	96	99
D. Daily SO_2 Removed (lbs./10^6 Btu)						
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.56	0.84	1.16	2.63	4.30	5.90
F. Stoicheimetric Ratio	2.0	2.0	2.0	-	-	-
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber					105.10	109.30
2. Sludge Pond					4.85	5.95
3. Total	38.48	38.48	38.48	95.25	109.85	115.25
B. O&M (Mills/KWH)	1.69	1.69	1.69	1.85	2.30	2.75
C. Capacity Penalty (%)	0.50	0.50	0.50	2.33	2.60	2.68
D. Energy Penalty (%)	0	0	0	3.15	3.75	4.30

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
DRY SCRUBBING; 0.7 LBS. SO_2/MMBTU CEILING; 33 PERCENT MINIMUM REMOVAL REQUIREMENT
(I)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.54	0.70	0.70	0.70	0.70	0.70
B. Percent Annual SO_2 Removed	33	41	58	79	86	89
C. Percent of Gas Treated	36	46	64	88	96	99
D. Daily SO_2 Removed (lbs./10^6 Btu)						
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.26	0.42	0.96	2.63	4.30	5.90
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber					105.10	109.30
2. Sludge Pond					4.85	5.95
3. Total	32.13	32.13	38.48	95.25	109.85	115.25
B. O&M (Mills/KWH)	1.15	1.15	1.50	1.85	2.36	2.75
C. Capacity Penalty (%)	0.50	0.50	0.50	2.33	2.60	2.68
D. Energy Penalty (%)	0	0	0	3.15	3.75	4.30

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
DRY SCRUBBING; 90 PERCENT REMOVAL WITH WASHING CREDIT; 0.9 LBS. CEILING; 0.5 LB. FLOOR; 70 PERCENT MINIMUM REMOVAL REQUIREMENT
(J)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.24	0.36	0.50	0.50	0.77	0.90
B. Percent Annual SO_2 Removed	70	70	70	85	85	86
C. Percent of Gas Treated	100	100	100	94	94	95
D. Daily SO_2 Removed (lbs./10^6 Btu)						
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.56	0.84	1.16	2.83	4.23	5.70
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber					105.10	109.30
2. Sludge Pond					4.85	5.95
3. Total	38.48	38.48	38.48	103.40	109.85	115.25
B. O&M (Mills/KWH)	1.69	1.69	1.69	2.08	2.36	2.75
C. Capacity Penalty (%)	0.50	0.50	0.50	2.60	2.60	2.68
D. Energy Penalty (%)	0	0	0	3.75	3.75	4.30

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
WET SCRUBBING; 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU CEILING; 0.5 LBS. SO_2/MMBTU FLOOR; 70 PERCENT MINIMUM REMOVAL REQUIREMENT
(K)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.24	0.36	0.50	0.50	0.77	1.00
B. Percent Annual SO_2 Removed	70	70	70	85	85	85
C. Percent of Gas Treated	100	100	100	94	94	94
D. Daily SO_2 Removed (lbs./10^6 Btu)						
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.56	0.84	1.16	2.83	4.23	5.60
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber				96.10	105.10	106.00
2. Sludge Pond				3.65	4.85	5.80
3. Total	84.80	85.50	86.20	99.75	109.85	111.80
B. O&M (Mills/KWH)	1.40	1.43	1.52	2.04	2.36	2.65
C. Capacity Penalty (%)	2.15	2.15	2.15	2.60	2.60	2.65
D. Energy Penalty (%)	2.15	2.15	2.15	3.75	3.75	3.80

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
DRY SCRUBBING; 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU CEILING; 0.5 LBS. SO_2/MMBTU FLOOR; 70 PERCENT MINIMUM REMOVAL REQUIREMENT
(L)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.24	0.36	0.50	0.50	0.77	1.00
B. Percent Annual SO_2 Removed	70	70	70	85	85	85
C. Percent of Gas Treated	100	100	100	94	94	94
D. Daily SO_2 Removed (lbs./10^6 Btu)						
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.56	0.84	1.16	2.83	4.23	5.60
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber				96.10	105.10	106.00
2. Sludge Pond				3.65	4.85	5.80
3. Total	38.48	38.48	38.48	99.75	109.85	111.80
B. O&M (Mills/KWH)	1.69	1.69	1.69	2.04	2.36	2.65
C. Capacity Penalty (%)	0.50	0.50	0.50	2.60	2.60	2.65
D. Energy Penalty (%)	0.50	0.50	0.50	3.75	3.75	3.80

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
DRY SCRUBBING; 90 PERCENT REMOVAL WITH WASHING CREDIT AND 1.0 LBS. SO_2/MMBTU CEILING
(M)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.08	0.12	0.17	0.39	0.77	1.00
B. Percent Annual SO_2 Removed	90	90	90	88	85	85
C. Percent of Gas Treated	100	100	100	98	94	94
D. Daily SO_2 Removed (lbs./10^6 Btu)						
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.72	1.08	1.49	2.94	4.23	5.60
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber	105.00	105.60	106.10	106.60	105.10	106.00
2. Sludge Pond	2.00	2.40	2.75	3.90	4.85	5.80
3. Total	107.00	108.00	108.85	110.50	109.85	111.80
B. O&M (Mills/KWH)	1.75	1.85	1.92	2.40	2.36	2.65
C. Capacity Penalty (%)	2.75	2.75	2.75	2.68	2.60	2.65
D. Energy Penalty (%)	4.35	4.35	4.35	4.30	3.75	3.80

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
DRY SCRUBBING; 90 PERCENT REMOVAL WITH WASHING CREDIT AND 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS./MMBTU FLOOR; 33 PERCENT MINIMUM REMOVAL
(O)

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.54	0.54	0.54	0.54	0.77	1.00
B. Percent Annual SO_2 Removed	0.33	55	67	84	85	85
C. Percent of Gas Treated	100	100	100	93	94	94
D. Daily SO_2 Removed (lbs./10^6 Btu)						
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.26	0.66	1.12	2.79	4.23	5.60
F. Stoicheimetric Ratio	1.5	1.5	2.0	-	-	-
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber				106.60	105.10	106.00
2. Sludge Pond				3.90	4.85	5.80
3. Total	32.13	32.13	38.48	110.50	109.85	111.80
B. O&M (Mills/KWH)	1.27	1.27	1.67	2.40	2.36	2.65
C. Capacity Penalty (%)	0.50	0.50	0.50	2.68	2.60	2.65
D. Energy Penalty (%)	0.5	0.5	0.5	4.30	3.75	3.80

Source: EPA, for a new 500 MW powerplant.

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THE FINAL SET OF ANALYSES OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR NEW COAL-FIRED POWERPLANTS

APPENDIX C

MORE DETAILED SUMMARY OF FORECASTS FOR CERTAIN ALTERNATIVES FOR 1990 AND 1995

ICF INCORPORATED

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COAL CONSUMPTION BY SECTOR UNDER CURRENT STANDARD
OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(106 tons)

Sector	1990	1995
Electric Utility	931.3	1,167.8
Scrubbed	361.4	445.8
Not Scrubbed	569.9	712.0
Industrial	278.0	320.7
Metallurgical	100.2	104.3
Residential/Commercial	0.7	0.4
Synthetics	55.9	88.3
Export	76.9	80.6
Total	1,443.0	1,762.0

1990 COAL CONSUMPTION BY SECTOR UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU

DRY SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	315.1	443.2	173.0	931.3
Scrubbed	-	12.4	278.3	70.6	361.4
Not Scrubbed	-	302.7	164.9	102.3	569.9
Industrial	-	184.8	1.6	91.6	278.0
Metallurgical	68.8	-	31.4	-	100.2
Residential/Commercial	-	0.2	0.5	-	0.7
Synthetics	-	2.6	34.1	19.1	55.9
Export	60.9	2.8	3.9	9.3	76.9
Total	129.7	505.5	514.7	293.0	1,443.0

1995 COAL CONSUMPTION BY SECTOR UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	470.2	507.2	190.4	1,167.8
Scrubbed	-	11.7	354.2	89.9	455.8
Not Scrubbed	-	458.4	153.0	100.6	712.0
Industrial	-	213.5	0.3	107.0	320.7
Metallurgical	71.6	-	32.7	-	104.3
Residential/Commercial	-	0.1	0.3	-	0.4
Synthetics	-	5.3	37.0	46.0	88.3
Export	63.9	2.8	4.1	9.7	80.6
Total	135.5	691.8	581.6	353.1	1,762.0

ANNUAL SO_2 EMISSIONS UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(10^3 tons)

	1975	1990	1995
New England			
Coal Plants			
Existing	48.4	139.8	106.3
NSPS	-	-	-
ANSPS	-	-	58.6
Oil/Gas Plants	101.8	108.7	31.8
Total	150.2	248.5	196.7
Middle Atlantic			
Coal Plants			
Existing	1,835.9	1,465.4	1,449.3
NSPS	-	103.3	103.3
ANSPS	-	358.0	739.9
Oil/Gas Plants	371.1	305.0	106.5
Total	2,207.6	2,231.7	2,399.0
South Atlantic			
Coal Plants			
Existing	2,632.2	3,103.5	3,052.1
NSPS	-	147.9	154.7
ANSPS	-	802.7	1,595.2
Oil/Gas Plants	746.1	468.7	274.7
Total	3,378.3	4,522.7	5,076.5
East			
Coal Plants			
Existing	4,516.5	4,708.7	4,607.7
NSPS	-	251.2	258.0
ANSPS	-	1,160.7	2,393.7
Oil/Gas Plants	1,219.6	882.4	413.0
Total	5,136.1	7,003.0	7,672.2
EAST NORTH CENTRAL			
Coal Plants			
Existing	6,771.8	4,961.3	4,750.9
NSPS	-	272.4	258.3
ANSPS	-	267.6	627.5
Oil/Gas Plants	103.4	115.6	77.2
Total	6,885.2	5,616.8	5,713.9

ANNUAL SO_2 EMISSIONS UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(103 tons)

	1975	1990	1995
EAST SOUTH CENTRAL			
Coal Plants			
Existing	3,351.5	2,267.6	2,184.6
NSPS	-	277.2	277.1
ANSPS	-	575.8	995.3
Oil/Gas Plants	43.2	72.5	59.5
Total	3,394.7	3,193.0	3,516.5
WEST NORTH CENTRAL			
Coal Plants			
Existing	1,491.5	1,810.0	1,716.3
NSPS	-	360.1	372.1
ANSPS	-	208.5	473.7
Oil/Gas Plants	41.4	33.3	36.2
Total	1,532.9	2,411.8	2,598.2
WEST SOUTH CENTRAL			
Coal Plants			
Existing	203.7	149.8	149.8
NSPS	-	693.0	693.0
ANSPS	-	776.0	1,472.6
Oil/Gas Plants	209.0	545.8	305.4
Total	412.7	2,164.5	2,620.7
Mountain			
Coal Plants			
Existing	322.9	333.8	296.1
NSPS	-	158.3	154.2
ANSPS	-	514.2	769.0
Oil/Gas Plants	25.2	20.6	12.4
Total	358.1	1,026.9	1,231.6
Pacific			
Coal Plants			
Existing	47.6	38.3	35.7
NSPS	-	17.5	17.5
ANSPS	-	117.0	302.6
Oil/Gas Plants	148.1	97.5	106.8
Total	195.7	270.3	462.7

ANNUAL SO_2 EMISSIONS UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(10^3 tons)

	1975	1990	1995
REST OF WEST			
Coal Plants			
Existing	380.5	372.1	331.8
NSPS	-	175.8	171.7
ANSPS	-	631.2	1,071.6
Oil/Gas Plants	173.3	118.1	119.2
Total	553.8	1,297.2	1,694.3
NATIONAL			
Coal Plants			
Existing	16,915.4	14,269.4	13,740.8
NSPS	-	2,029.7	2,030.1
ANSPS	-	3,619.7	7,034.3
Oil/Gas Plants	1,789.9	1,767.5	1,010.4
Total	18,705.3	21,686.2	23,815.7

Source for 1975 data: EPA National Emissions Data System, Computer Printout, May 1, 1978.

ANNUAL NATIONAL NO_x AND PARTICULATE EMISSIONS UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(10^3 tons)

	NO_x		TSP	
	1990	1995	1990	1995
NATIONAL				
Oil/Gas	1,267.9	152.2	755.9	90.4
Coal	7,349.2	1,001.2	9,192.4	1,263.4
Existing	3,798.8	501.0	3,574.4	472.8
NSPS	1,288.8	181.4	1,288.2	181.1
ANSPS	2,261.6	318.8	4,299.8	609.6
Total	8,617.0	1,153.4	9,918.2	1,353.8

NATIONAL UTILITY FUEL CONSUMPTION UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU DRY SCRUBBING (quadrillion Btu)

	1975	1990	1995
NATIONAL			
Coal	9.3	20.0	25.3
Existing	9.3	10.0	9.5
NSPS	-	3.6	3.6
ANSPS	-	6.4	12.2
Oil/Gas	6.2	4.0	2.6
Nuclear	1.7	9.7	13.5
Hydro and Other	2.0	3.4	3.4
Total	19.2	37.1	44.7
Percent of Total			
Coal	48.4	53.9	56.6
Oil/Gas	32.3	10.8	5.8
Nuclear	8.9	26.1	30.2
Hydro and Other	10.4	9.2	7.6

UTILITY OIL/GAS CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England	0.425	0.241	0.080
Middle Atlantic	0.824	0.711	0.290
South Atlantic	1.010	0.739	0.475
EAST	2.259	1.691	0.845
EAST NORTH CENTRAL	0.317	0.370	0.257
EAST SOUTH CENTRAL	0.112	0.139	0.141
WEST NORTH CENTRAL	0.289	0.109	0.131
WEST SOUTH CENTRAL	2.162	1.185	0.672
Mountain	0.249	0.085	0.069
Pacific	0.787	0.419	0.474
WEST	1.036	0.504	0.543
TOTAL	6.175	3.998	2.590
Oil for Coal Transportation		0.291	0.369
TOTAL		4.289	2.959

UTILITY COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England			
High Sulfur		0.198	0.147
Medium Sulfur		0.005	0.090
Low Sulfur		-	-
Total	0.047	0.203	0.237
Middle Atlantic			
High Sulfur		0.257	0.252
Medium Sulfur		1.397	1.936
Low Sulfur		0.170	0.241
Total	1.076	1.824	2.429
South Atlantic			
High Sulfur		0.639	1.094
Medium Sulfur		2.687	2.929
Low Sulfur		0.680	1.238
Total	1.789	4.006	5.261
EAST			
High Sulfur		1.094	1.493
Medium Sulfur		4.088	4.955
Low Sulfur		0.850	1.479
Total	2.912	6.032	7.928
EAST NORTH CENTRAL			
High Sulfur		1.345	1.310
Medium Sulfur		1.851	2.096
Low Sulfur		0.975	1.173
Total	2.670	4.170	5.579
EAST SOUTH CENTRAL			
High Sulfur		1.128	1.207
Medium Sulfur		0.990	1.612
Low Sulfur		0.728	0.634
Total	1.328	2.846	3.453
WEST NORTH CENTRAL			
High Sulfur		0.416	0.396
Medium Sulfur		0.660	0.636
Low Sulfur		0.823	1.261
Total	0.783	1.899	2.293

UTILITY COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
WEST SOUTH CENTRAL			
High Sulfur		-	-
Medium Sulfur		0.942	0.938
Low Sulfur		1.638	2.803
Total	0.119	2.580	3.741
Mountain			
High Sulfur		-	-
Medium Sulfur		0.977	0.921
Low Sulfur		1.265	1.791
Total	0.615	2.242	2.712
Pacific			
High Sulfur		-	-
Medium Sulfur		0.063	0.031
Low Sulfur		0.192	0.533
Total	0.069	0.255	0.564
REST OF WEST			
High Sulfur		-	-
Medium Sulfur		1.040	0.952
Low Sulfur		1.457	2.324
Total	0.685	2.497	3.276
NATIONAL			
High Sulfur		3.983	4.406
Medium Sulfur		9.571	11.189
Low Sulfur		6.470	9.673
Total	8.719	20.024	25.268

1995 ANSPS COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Maine/Vt./New Hampshire				
ANSPS (Part)	0.932	BF	0.028	Pennsylvania
ANSPS (Full)	-	---	-	-
ANSPS (No Scrub)	-	---	-	-
Total	0.932		0.028	
Mass./Conn./Rhode Island				
ANSPS (Part)	1.738	BF	0.056	Ohio
ANSPS (Part)	0.400	BG	0.013	Ohio
ANSPS (Full)	-	---	-	-
ANSPS (No Scrub)	-	---	-	-
Total	2.137		0.070	
Pennsylvania, West				
ANSPS (Part)	2.835	BF	0.158	Northern West Virginia
ANSPS (Full)	-	---	-	-
ANSPS (No Scrub)	4.921	BB	0.156	Southern West Virginia
Total	7.755		0.314	
Pennsylvania, East/N.J./N.Y.DS				
ANSPS (Part)	18.280	BF	0.589	Pennsylvania
ANSPS (Full)	-	---	-	-
ANSPS (No Scrub)	1.429	BB	0.040	Pennsylvania
Total	19.709		0.629	
New York, Upstate				
ANSPS (Part)	6.522	BF	0.273	Pennsylvania
ANSPS (Full)	-	---	-	-
ANSPS (No Scrub)	0.546	BB	0.018	Pennsylvania
Total	7.067		0.291	
Virginia/Md./Del.				
ANSPS (Part)	6.712	BF	0.267	Pennsylvania
ANSPS (Full)	-	---	-	-
ANSPS (No Scrub)	3.219	BB	0.099	Southern & Northern West Virginia
Total	9.931		0.366	
West Virginia				
ANSPS (Part)	-	---	-	-
ANSPS (Full)	-	---	-	-
ANSPS (No Scrub)	-	---	-	-
Total	-		-	

1995 ANSPS COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
North & South Carolina				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	12.618	BB	0.420	Virginia
Total	12.618		0.420	
Georgia/North Florida				
ANSPS (Part)	3.934	BF	0.220	Illinois
ANSPS (Part)	8.248	BG	0.474	Illinois
ANSPS (No Scrub)	6.959	BB	0.204	Virginia & East Kentucky
Total	19.142		0.897	
South Florida				
ANSPS (Part)	12.852	BF	0.717	Pennsylvania
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	7.773	BB	0.258	East Kentucky
Total	20.625		0.975	
Ohio, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Ohio, Central				
ANSPS (Part)	5.943	BF	0.332	Ohio & Illinois
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	2.957	BB	0.098	East Kentucky
Total	8.900		0.430	
Ohio, South				
ANSPS (Part)	1.839	BF	0.103	Northern West Virginia
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	3.363	BB	0.117	Southern West Virginia
Total	5.202		0.220	
Michigan				
ANSPS (Part)	1.425	SF	0.080	West Montana
ANSPS (No Scrub)	5.152	BB	0.175	East Kentucky
ANSPS (No Scrub)	0.165	SA	0.010	West Montana
Total	6.742		0.264	

1995 ANSPS COAL CONSUMPTION UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Illinois				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	1.305	BB	0.041	South Colorado & East Kentucky
Total	1.305		0.041	
Indiana				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Wisconsin				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
ANSPS (No Scrub)	2.834	BB	0.094	Wyoming & South Colorado
Total	2.834		0.094	
Kentucky, East				
ANSPS (Part)	0.191	BD	0.011	Indiana
ANSPS (Part)	1.496	BG	0.086	Indiana
ANSPS (No Scrub)	2.071	BB	0.061	Indiana & East Kentucky
Total	3.759		0.157	
Kentucky, West				
ANSPS (Part)	2.864	BD	0.150	Indiana
ANSPS (Part)	3.650	BF	0.191	Illinois
ANSPS (No Scrub)	7.767	BB	0.232	Wyoming & Southern West Virginia
Total	14.281		0.574	
Tennessee, East				
ANSPS (Part)	0.532	BG	0.018	Indiana
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	0.532		0.018	

1995 ANSPS COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Tennessee, West				
ANSPS (Part)	0.469	BG	0.025	Illinois
ANSPS (Part)	10.594	BF	0.581	Illinois
ANSPS (No Scrub)	2.242	SA	0.085	West Montana
ANSPS (No Scrub)	0.892	SB	0.030	West Montana
Total	14.197		0.721	
Alabama/Mississippi				
ANSPS (Part)	0.546	BD	0.019	Illinois
ANSPS (Part)	4.147	BF	0.144	Illinois
ANSPS (No Scrub)	1.549	BB	0.054	Wyoming & Oklahoma
Total	6.243		0.217	
North & South Dakota/Minnesota				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	3.091	SA	0.100	West Montana
ANSPS (No Scrub)	1.243	LA	0.070	North Dakota
ANSPS (No Scrub)	1.254	LB	0.071	North Dakota
Total	5.588		0.241	
Kansas/Nebraska				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	3.126	BB	0.094	Wyoming
ANSPS (No Scrub)	2.111	SB	0.116	Wyoming
Total	5.237		0.210	
Iowa				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	0.648	BB	0.202	Wyoming
ANSPS (No Scrub)	1.462	SA	0.080	West Montana
ANSPS (No Scrub)	3.285	SB	0.180	West Montana
Total	5.396		0.280	
Missouri				
ANSPS (Part)	-	--	-	-
ANSPS (No Scrub)	0.797	BB	0.025	-
ANSPS (No Scrub)	2.142	SB	0.117	-
Total	2.939		0.142	

1995 ANSPS COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Arkansas/Oklahoma/Louisiana				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	10.662	BB	0.375	South Colorado & Wyoming
ANSPS (No Scrub)	7.428	SB	0.407	West Montana
Total	18.090		0.783	
Texas				
ANSPS (Part)	9.241	LF	0.519	Texas
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	29.488	BB	1.127	South Colorado
ANSPS (No Scrub)	0.472	SB	0.026	West Montana
Total	39.201		1.671	
Idaho				
ANSPS (Part)	-	--	-	-
ANSPS (No Scrub)	0.840	BB	0.029	Wyoming
ANSPS (No Scrub)	6.732	SB	0.380	Wyoming
Total	7.572		0.408	
Montana				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	7.057	SA	0.412	West Montana
ANSPS (No Scrub)	2.996	SB	0.175	West Montana
Total	10.052		0.588	
Wyoming				
ANSPS (Part)	0.122	SA	0.004	West Montana & Wyoming
ANSPS (Full)	0.207	SD	0.008	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	0.328		0.012	
Utah				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	1.298	BB	0.072	Utah
Total	1.298		0.072	

1995 ANSPS COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Nevada				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	2.180	BB	0.116	Utah
Total	2.180		0.116	
Colorado				
ANSPS (Part)	0.961	BA	0.033	South Colorado
ANSPS (Part)	0.198	BB	0.007	South Colorado
ANSPS (Part)	0.033	BD	0.001	New Mexico
ANSPS (Part)	0.306	SA	0.011	Wyoming
Total	1.498		0.051	
Arizona				
ANSPS (Part)	4.965	BD	0.260	New Mexico
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	0.249	BA	0.007	New Mexico
Total	5.214		0.267	
New Mexico				
ANSPS (Part)	0.001	BA	0.000	New Mexico
ANSPS (Part)	2.180	BD	0.118	New Mexico
ANSPS (No Scrub)	-	--	-	-
Total	2.182		0.118	
Washington/Oregon				
ANSPS (Part)	0.006	BD	0.000	Wyoming
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	0.009	BB	0.001	Utah
ANSPS (No Scrub)	8.615	SB	0.504	West Montana
Total	8.630		0.504	
California, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
California, South				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	

AGGREGATED REGIONAL COAL PRODUCTION UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia	158.2	227.7	307.1
Central Appalachia	211.1	192.8	204.4
Southern Appalachia	22.9	14.0	12.9
APPALACHIA	392.1	434.5	524.4
MIDWEST	138.6	329.9	391.0
Eastern Northern Great Plains	8.5	29.2	35.4
Western Northern Great Plains	45.2	448.0	594.3
NORTHERN GREAT PLAINS	53.7	477.2	629.7
Central West	9.5	4.0	6.6
Gulf	10.0	71.8	61.8
Rockies	14.0	76.4	103.9
Southwest	15.7	45.5	47.5
Northwest	4.5	5.6	1.9
REST OF WEST	50.0	203.3	221.6
TOTAL	634.6	1,445.0	1,766.6

REGIONAL COAL PRODUCTION UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU

DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia			
Metallurgical	13.5	18.8	27.3
High Sulfur	107.1	66.7	72.9
Medium Sulfur	37.4	141.8	206.2
Low Sulfur	0.2	0.4	0.7
Total	158.1	227.7	307.1
Central Appalachia			
Metallurgical	83.0	135.3	158.9
High Sulfur	23.6	4.2	-
Medium Sulfur	91.9	34.3	24.8
Low Sulfur	12.6	19.0	20.7
Total	211.1	192.8	204.4
Southern Appalachia			
Metallurgical	1.7	5.1	6.5
High Sulfur	-	-	-
Medium Sulfur	21.2	4.3	1.0
Low Sulfur	-	4.6	5.4
Total	22.9	14.0	12.9
APPALACHIA			
Metallurgical	98.2	159.2	192.8
High Sulfur	130.7	70.8	72.9
Medium Sulfur	150.5	180.5	232.0
Low Sulfur	12.8	24.0	26.7
Total	392.1	434.5	524.4
MIDWEST			
Metallurgical	-	-	-
High Sulfur	131.6	222.1	268.6
Medium Sulfur	7.1	106.8	121.0
Low Sulfur	-	1.0	1.4
Total	138.6	329.9	391.0
Eastern Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	0.3	0.3	10.3
Medium Sulfur	7.8	21.8	16.5
Low Sulfur	0.4	7.1	8.6
Total	8.6	29.2	35.4

REGIONAL COAL PRODUCTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU

DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Western Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	7.6	127.3	167.4
Low Sulfur	37.6	320.7	426.9
Total	45.2	448.0	594.3
NORTHERN GREAT PLAINS			
Metallurgical	-	-	-
High Sulfur	0.3	0.3	10.3
Medium Sulfur	15.4	149.1	183.9
Low Sulfur	38.0	327.8	435.4
Total	53.8	477.2	629.7
Central West			
Metallurgical	0.3	0.1	0.1
High Sulfur	8.4	1.9	3.2
Medium Sulfur	0.8	1.3	2.1
Low Sulfur	-	0.6	1.2
Total	8.5	4.0	6.6
Gulf			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	10.0	71.8	61.8
Low Sulfur	-	-	-
Total	10.0	71.8	61.8
Rockies			
Metallurgical	2.9	5.5	4.6
High Sulfur	-	-	-
Medium Sulfur	0.8	7.3	11.5
Low Sulfur	10.4	63.7	87.8
Total	14.1	76.4	103.9
Southwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	15.2	16.0	1.7
Low Sulfur	0.5	29.5	45.8
Total	15.7	45.5	47.5

REGIONAL COAL PRODUCTION UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU

DRY SCRUBBING

(10^6 tons)

	1975	1990	1995
Northwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	3.7	5.7	1.9
Low Sulfur	0.8	-	-
Total	4.5	5.7	1.9
WEST			
Metallurgical	3.3	5.6	4.7
High Sulfur	8.4	1.9	3.2
Medium Sulfur	30.4	102.0	79.0
Low Sulfur	11.7	93.8	134.8
Total	53.7	203.3	221.6
TOTAL			
Metallurgical	101.7	164.8	197.4
High Sulfur	147.8	295.2	354.9
Medium Sulfur	197.0	538.4	615.9
Low Sulfur	62.5	446.6	598.4
Total	509.0	1,445.0	1,766.6

MINE-MOUTH PRICE
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING

($\$/10^6$ Btu)
(1978 $'s)

	1990	1995
Northern Appalachia		
High Sulfur	1.07	1.12
Medium Sulfur	1.19	1.26
Low Sulfur	1.58	1.67
Regional Average	1.19	1.27
Central Appalachia		
High Sulfur	1.13	1.18
Medium Sulfur	1.33	1.44
Low Sulfur	1.56	1.68
Regional Average	1.53	1.66
Southern Appalachia		
High Sulfur	--	--
Medium Sulfur	1.32	1.47
Low Sulfur	1.59	1.68
Regional Average	1.53	1.69
Midwest		
High Sulfur	0.99	1.04
Medium Sulfur	1.31	1.38
Low Sulfur	1.62	1.71
Regional Average	1.10	1.15
Eastern Northern Great Plains		
High Sulfur	0.42	0.42
Medium Sulfur	0.43	0.43
Low Sulfur	0.48	0.55
Regional Average	0.44	0.46
Western Northern Great Plains (Bituminous)		
High Sulfur	--	--
Medium Sulfur	0.88	0.98
Low Sulfur	1.08	1.19
Regional Average	1.01	1.11
Western Northern Great Plains (Subbituminous)		
High Sulfur	--	--
Medium Sulfur	0.40	0.42
Low Sulfur	0.51	0.53
Regional Average	0.48	0.50

MINE-MOUTH PRICE
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING

($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Central West		
High Sulfur	1.09	1.16
Medium Sulfur	1.30	1.38
Low Sulfur	1.50	1.59
Regional Average	1.25	1.33
Gulf		
High Sulfur	--	--
Medium Sulfur	0.64	1.06
Low Sulfur	--	--
Regional Average	0.64	1.06
Rocky Mountain		
High Sulfur	--	--
Medium Sulfur	0.97	1.08
Low Sulfur	1.06	1.19
Regional Average	1.08	1.20
Southwest		
High Sulfur	--	--
Medium Sulfur	0.72	0.98
Low Sulfur	0.64	0.85
Regional Average	0.67	0.86
Northwest		
High Sulfur	--	--
Medium Sulfur	0.86	0.90
Low Sulfur	--	--
Regional Average	0.86	0.90
National		
High Sulfur	1.01	1.05
Medium Sulfur	1.00	1.09
Low Sulfur	0.74	0.79
Regional Average	1.02	1.08

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Northeast		
High Sulfur	1.40	1.47
Medium Sulfur	1.99	1.68
Low Sulfur	--	--
Regional Average	1.41	1.55
Middle Atlantic		
High Sulfur	1.33	1.36
Medium Sulfur	1.53	1.60
Low Sulfur	1.87	1.97
Regional Average	1.53	1.61
South Atlantic		
High Sulfur	1.31	1.36
Medium Sulfur	1.58	1.65
Low Sulfur	1.91	2.06
Regional Average	1.59	1.69
East North Central		
High Sulfur	1.19	1.24
Medium Sulfur	1.51	1.57
Low Sulfur	1.74	1.84
Regional Average	1.46	1.54
East South Central		
High Sulfur	1.21	1.27
Medium Sulfur	1.40	1.43
Low Sulfur	1.69	1.79
Regional Average	1.40	1.44
West North Central		
High Sulfur	1.14	1.19
Medium Sulfur	1.05	1.06
Low Sulfur	1.18	1.22
Regional Average	1.13	1.17
West South Central		
High Sulfur	--	--
Medium Sulfur	0.75	1.16
Low Sulfur	1.46	1.54
Regional Average	1.20	1.45

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(\$/106 Btu)
(1978 \$'s)

	1990	1995
Mountain		
High Sulfur	--	--
Medium Sulfur	0.68	0.96
Low Sulfur	0.90	0.91
Regional Average	0.81	0.93
Pacific		
High Sulfur	--	--
Medium Sulfur	1.02	1.09
Low Sulfur	1.07	1.11
Regional Average	1.06	1.11
National Total		
High Sulfur	1.23	1.29
Medium Sulfur	1.33	1.46
Low Sulfur	1.43	1.49
Regional Average	1.34	1.44

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

1990 NATIONAL COAL TRANSPORTATION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(10^6 tons)

Origin	Destination New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.6	97.9	87.5	30.5	-	-	-	-	-	227.5
Central Appalachia	-	23.8	93.8	62.0	11.7	0.7	0.9	-	-	192.9
Southern Appalachia	-	-	6.1	-	7.9	-	-	-	-	14.0
Midwest	-	-	46.2	160.8	99.2	23.7	-	-	-	329.9
Central West	-	-	-	-	1.7	1.3	0.6	-	0.3	3.9
Gulf	-	-	-	-	-	-	71.8	-	-	71.8
Eastern Northern Great Plains	-	-	-	-	-	29.0	-	0.2	-	29.2
Western Northern Great Plains	-	-	-	24.0	46.3	69.0	190.6	102.0	16.0	447.9
Rocky Mountains	-	-	-	21.6	-	4.4	23.9	18.4	8.1	76.4
Southwest	-	-	-	-	-	-	8.1	33.3	4.1	45.5
Northwest	-	-	-	-	-	-	-	-	5.6	5.6
Total	11.6	121.7	233.6	298.9	166.8	128.1	295.9	153.9	34.1	1,444.6

1995 NATIONAL COAL TRANSPORTATION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(10^6 tons)

Origin	Destination New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	13.2	123.5	119.1	50.8	-	-	-	-	-	306.6
Central Appalachia	-	25.8	96.6	70.7	10.6	0.7	-	-	-	204.4
Southern Appalachia	-	-	5.6	-	7.3	-	-	-	-	12.9
Midwest	-	-	68.1	167.5	129.8	23.8	1.8	-	-	391.0
Central West	-	-	0.6	-	1.6	2.8	1.5	-	-	6.5
Gulf	-	-	-	-	-	-	61.8	-	-	61.8
Eastern Northern Great Plains	-	-	-	-	-	35.3	-	0.1	-	35.4
Western Northern Great Plains	-	-	-	22.3	55.4	89.9	241.4	146.7	38.6	594.3
Rocky Mountains	-	-	-	18.7	-	3.9	51.0	19.3	10.9	103.8
Southwest	-	-	-	-	-	-	13.8	31.1	2.7	47.6
Northwest	-	-	-	-	-	-	-	-	1.9	1.9
Total	13.2	149.3	290.0	330.0	204.7	156.4	371.3	197.2	54.1	1,766.2

1990 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING

(MW of baseload capacity)
(New Links)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	2.94	-	-	-	-	-	-	2.94
South Atlantic	-	5.04	-	-	-	-	-	-	-	5.04
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	1.78	-	-	-	-	-	-	1.78
West North Central	-	-	-	-	-	-	-	-	-	-
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	13.18	13.18
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	5.04	4.72	-	-	-	-	-	13.18	22.94

1995 INTER-REGIONAL ELECTRICITY TRANSMISSION UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(MW of baseload capacity)
(New Links)

Origin	Destination New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	2.94	-	-	-	-	-	-	2.94
South Atlantic	-	3.80	-	-	-	-	-	-	-	3.80
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	-	-	-	-	-	-	-	-
West North Central	-	-	-	2.20	-	-	-	-	-	2.20
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	12.85	12.85
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	3.80	2.94	2.20	-	-	-	-	12.85	21.79

NATIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(GW (percent capacity factor))

	1975	1990	1995
NATIONAL			
Nuclear	37.2	165.3 (66.9)	230.0 (66.9)
Coal	183.6	410.5 (56.9)	553.6 (53.5)
Existing*	183.6	197.9 (57.4)	197.9 (54.0)
NSPS	-	76.4 (56.5)	76.4 (56.4)
ANSPS	-	136.2 (56.5)	279.3 (52.3)
Oil/Gas	192.1	207.9 (18.7)	184.6 (13.0)
Steam*	147.3	141.0 (23.6)	105.2 (16.8)
Combined Cycle	2.7	5.5 (21.5)	7.5 (19.1)
Turbines	42.2	61.4 (7.3)	71.9 (6.9)
Hydro and Others	68.3	87.8 (44.0)	89.5 (43.5)
Total	481.2	871.3 (48.4)	1,057.7 (48.5)
Percent of Total			
Nuclear	7.7	19.0	21.7
Coal	38.2	47.1	52.3
Oil/Gas	39.9	23.9	17.5
Other	14.2	10.0	8.5

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* Powerplants under ESECA orders to convert from oil and/or gas to coal (14.3 GW) are assumed to convert by 1985.

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR)
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
New England		
Nuclear	10.1 (70.0)	14.0 (70.0)
Coal	4.0 (55.5)	7.1 (36.8)
Existing	4.0 (55.5)	4.0 (36.6)
NSPS	-	-
ANSPS	-	3.1 (37.1)
Oil/Gas	8.8 (28.5)	4.7 (17.2)
Steam	7.7 (30.7)	2.6 (25.0)
Combined Cycle	0.4 (30.6)	0.4 (20.5)
Turbines	0.8 (5.0)	1.8 (5.0)
Hydro and Others	2.9 (18.1)	2.9 (18.1)
Total	25.8 (47.8)	28.7 (47.8)
Percent of Total		
Nuclear	39.1	48.8
Coal	15.5	24.7
Oil/Gas	34.1	16.4
Other	11.2	10.1
Middle Atlantic		
Nuclear	26.2 (65.3)	36.4 (65.3)
Coal	37.3 (56.3)	57.7 (48.8)
Existing	20.1 (57.8)	20.1 (56.0)
NSPS	3.1 (70.0)	3.1 (70.0)
ANSPS	14.1 (51.3)	34.5 (42.7)
Oil/Gas	32.9 (21.2)	21.2 (12.7)
Steam	21.1 (29.8)	8.2 (24.5)
Combined Cycle	0.4 (22.6)	0.4 (6.2)
Turbines	11.4 (5.3)	12.6 (5.3)
Hydro and Others	8.0 (46.1)	9.0 (41.4)
Total	104.4 (46.7)	124.4 (47.0)
Percent of Total		
Nuclear	25.1	29.3
Coal	35.7	46.4
Oil/Gas	31.5	17.0
Other	7.7	7.2

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
South Atlantic		
Nuclear	32.2 (66.2)	44.7 (66.2)
Coal	84.6 (57.2)	117.2 (54.1)
Existing	46.9 (62.0)	46.9 (60.0)
NSPS	8.0 (36.2)	8.0 (38.1)
ANSPS	29.7 (55.3)	62.3 (51.7)
Oil/Gas	36.1 (20.4)	32.7 (13.7)
Steam	22.7 (27.0)	18.4 (18.2)
Combined Cycle	0.6 (35.9)	0.6 (21.3)
Turbines	12.7 (7.7)	13.7 (7.4)
Hydro and Others	10.4 (23.8)	10.5 (23.7)
Total	163.2 (48.7)	205.1 (48.7)
Percent of Total		
Nuclear	19.7	21.8
Coal	51.8	57.1
Oil/Gas	22.1	15.9
Other	6.4	5.1
East North Central		
Nuclear	33.0 (67.7)	45.9 (67.7)
Coal	86.7 (54.6)	100.1 (52.3)
Existing	62.9 (57.9)	62.9 (54.8)
NSPS	12.2 (45.1)	12.2 (42.0)
ANSPS	11.6 (46.4)	25.0 (51.0)
Oil/Gas	18.8 (17.8)	17.0 (13.1)
Steam	10.7 (24.5)	9.4 (17.2)
Combined Cycle	0.2 (19.1)	0.2 (8.0)
Turbines	7.9 (8.7)	7.4 (8.0)
Hydro and Others	1.7 (16.9)	1.7 (16.9)
Total	140.1 (52.3)	164.6 (52.2)
Percent of Total		
Nuclear	23.6	27.9
Coal	61.9	60.8
Oil/Gas	13.4	10.3
Other	1.2	1.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU

DRY SCRUBBING

(GW (percent capacity factor))

	1990	1995
East South Central		
Nuclear	23.0 (67.4)	32.0 (67.4)
Coal	61.8 (54.0)	77.6 (52.4)
Existing	30.2 (52.5)	30.2 (49.2)
NSPS	8.4 (67.9)	8.4 (67.9)
ANSPS	23.2 (51.0)	39.0 (51.5)
Oil/Gas	12.6 (9.6)	14.9 (8.0)
Steam	3.0 (17.1)	3.0 (11.2)
Combined Cycle	-	-
Turbines	9.7 (7.3)	11.9 (7.2)
Hydro and Others	6.7 (41.6)	6.8 (40.9)
Total	104.2 (50.8)	131.4 (50.4)
Percent of Total		
Nuclear	22.1	24.4
Coal	59.3	59.1
Oil/Gas	12.1	11.3
Other	6.4	5.2
West North Central		
Nuclear	9.1 (65.0)	12.6 (65.0)
Coal	41.8 (51.1)	50.9 (51.0)
Existing	18.4 (50.8)	18.4 (45.8)
NSPS	13.4 (53.3)	13.4 (55.0)
ANSPS	10.0 (48.6)	19.2 (53.2)
Oil/Gas	12.3 (7.0)	15.3 (7.0)
Steam	4.3 (6.9)	4.3 (6.9)
Combined Cycle	0.9 (8.0)	0.9 (8.0)
Turbines	7.9 (7.0)	11.0 (7.0)
Hydro and Others	4.1 (41.2)	4.1 (41.2)
Total	67.3 (44.3)	83.0 (44.5)
Percent of Total		
Nuclear	13.5	15.2
Coal	62.1	61.3
Oil/Gas	18.3	18.4
Other	6.1	4.9

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
West South Central		
Nuclear	13.1 (65.0)	18.2 (65.0)
Coal	47.2 (64.8)	82.5 (54.9)
Existing	2.2 (64.8)	2.2 (64.8)
NSPS	20.9 (65.0)	20.9 (65.0)
ANSPS	24.0 (64.7)	57.3 (50.9)
Oil/Gas	59.3 (19.7)	47.6 (12.5)
Steam	55.7 (20.4)	44.0 (12.9)
Combined Cycle	1.4 (12.9)	1.4 (10.4)
Turbines	2.2 (6.0)	2.2 (6.0)
Hydro and Others	2.5 (19.5)	2.5 (19.5)
Total	122.1 (42.0)	148.7 (42.0)
Percent of Total		
Nuclear	10.7	12.2
Coal	38.7	55.5
Oil/Gas	48.6	32.0
Other	2.0	1.7
Mountain		
Nuclear	4.3 (65.4)	5.9 (65.4)
Coal	41.9 (62.8)	52.1 (61.2)
Existing	11.8 (60.7)	11.8 (54.3)
NSPS	10.0 (58.8)	10.0 (57.7)
ANSPS	20.1 (66.0)	30.3 (65.1)
Oil/Gas	6.4 (12.0)	6.5 (8.4)
Steam	2.2 (16.1)	1.6 (6.1)
Combined Cycle	0.5 (13.7)	0.5 (13.7)
Turbines	3.6 (9.3)	4.4 (9.5)
Hydro and Others	9.2 (45.9)	9.6 (45.5)
Total	61.6 (55.2)	74.2 (54.9)
Percent of Total		
Nuclear	7.0	8.0
Coal	68.0	70.2
Oil/Gas	10.4	8.8
Other	14.9	12.9

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
Pacific		
Nuclear	14.4 (70.0)	20.1 (70.0)
Coal	5.1 (58.6)	10.4 (64.4)
Existing	1.3 (25.0)	1.3 (25.0)
NSPS	0.5 (70.0)	0.5 (70.0)
ANSPS	3.3 (70.0)	8.6 (70.0)
Oil/Gas	20.7 (20.9)	24.7 (20.3)
Steam	13.6 (25.2)	13.9 (26.1)
Combined Cycle	1.9 (23.9)	3.9 (24.6)
Turbines	5.3 (8.7)	6.7 (6.0)
Hydro and Others	42.4 (53.1)	42.4 (53.1)
Total	82.6 (48.3)	97.6 (49.5)
Percent of Total		
Nuclear	17.4	20.6
Coal	6.2	10.7
Oil/Gas	25.1	25.3
Other	51.3	43.4
National		
Nuclear	165.3 (66.9)	230.0 (66.9)
Coal	410.5 (56.9)	553.6 (53.5)
Existing*	197.9 (57.4)	197.9 (54.0)
NSPS	76.4 (56.5)	76.4 (56.4)
ANSPS	136.2 (56.5)	279.3 (52.3)
Oil/Gas	207.9 (18.7)	184.6 (13.0)
Steam*	141.0 (23.6)	105.2 (16.8)
Combined Cycle	5.5 (21.5)	7.5 (19.1)
Turbines	61.4 (7.3)	71.9 (6.9)
Hydro and Others	87.8 (44.0)	89.5 (43.5)
Total	871.3 (48.4)	1,057.7 (48.5)
Percent of Total		
Nuclear	19.0	21.7
Coal	47.1	52.3
Oil/Gas	23.9	17.5
Other	10.0	8.5

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU DRY SCRUBBING (GW)

	1990		1995	
	GW	(%)	GW	(%)
New England				
Capacity Full Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	3.315	(79.9)	3.315	(79.9)
NSPS	-	-	-	-
ANSPS	-	-	3.070	(65.6)
Total Capacity Scrubbed				
Existing	3.314	(79.9)	3.315	(79.9)
NSPS	-	-	-	-
ANSPS	-	-	3.070	(65.6)
Middle Atlantic				
Capacity Fully Scrubbed				
Existing	2.029	(90.0)	2.030	(90.0)
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	6.190	(42.6)	6.185	(43.4)
NSPS	3.077	(65.2)	3.077	(65.2)
ANSPS	9.673	(64.1)	27.636	(64.1)
Total Capacity Scrubbed				
Existing	8.219	(54.3)	8.215	(54.9)
NSPS	3.077	(65.2)	3.077	(65.2)
ANSPS	9.673	(64.1)	27.636	(64.1)
South Atlantic				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	22.362	(53.4)	22.822	(53.1)
NSPS	1.931	(46.8)	1.932	(49.7)
ANSPS	16.395	(64.1)	31.746	(67.1)
Total Capacity Scrubbed				
Existing	22.362	(53.4)	22.822	(53.1)
NSPS	1.931	(46.8)	1.932	(49.7)
ANSPS	16.395	(64.1)	31.746	(67.1)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
East				
Capacity Fully Scrubbed				
Existing	2.029	(90.0)	2.030	(90.0)
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	31.867	(54.1)	32.322	(54.0)
NSPS	5.008	(58.1)	5.009	(59.2)
ANSPS	26.068	(64.1)	62.452	(65.7)
Total Capacity Scrubbed				
Existing	33.896	(56.2)	34.352	(56.1)
NSPS	5.008	(58.1)	5.009	(59.2)
ANSPS	26.068	(64.1)	62.452	(65.7)
East North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	7.870	(74.3)	8.165	(71.3)
NSPS	4.146	(33.0)	3.721	(31.1)
ANSPS	2.438	(64.1)	9.207	(64.1)
Total Capacity Scrubbed				
Existing	7.870	(74.3)	8.165	(71.3)
NSPS	4.146	(33.0)	3.721	(31.1)
ANSPS	2.438	(64.1)	9.207	(64.1)
East South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	7.961	(63.2)	7.963	(63.2)
NSPS	6.174	(58.3)	6.174	(58.3)
ANSPS	8.772	(52.7)	24.489	(59.9)
Total Capacity Scrubbed				
Existing	7.961	(63.2)	7.963	(63.2)
NSPS	6.174	(58.3)	6.174	(58.3)
ANSPS	8.772	(52.7)	24.489	(59.9)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU DRY SCRUBBING (GW)

	1990		1995	
	GW	(%)	GW	(%)
West North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	-	-	-	-
West South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	1.110	(64.1)	1.108	(64.1)
NSPS	5.100	(64.1)	5.094	(64.1)
ANSPS	9.242	(64.1)	9.241	(64.1)
Total Capacity Scrubbed				
Existing	1.110	(64.1)	1.108	(64.1)
NSPS	5.100	(64.1)	5.094	(64.1)
ANSPS	9.242	(64.1)	9.241	(64.1)
Mountain				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	0.209	(90.0)	0.207	(90.0)
Capacity Partially Scrubbed				
Existing	3.828	(27.7)	3.816	(27.8)
NSPS	9.312	(55.3)	9.308	(55.3)
ANSPS	8.464	(58.4)	8.766	(57.3)
Total Capacity Scrubbed				
Existing	3.828	(27.7)	3.816	(27.8)
NSPS	9.312	(55.3)	9.308	(55.3)
ANSPS	8.673	(59.1)	8.973	(58.1)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
Pacific				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	0.557	(27.7)	0.006	(27.7)
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	0.557	(27.7)	0.006	(27.7)
Rest of West				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	0.209	(90.0)	0.207	(90.0)
Capacity Partially Scrubbed				
Existing	3.828	(27.7)	3.816	(27.8)
NSPS	9.312	(55.3)	9.308	(55.3)
ANSPS	9.021	(56.5)	8.772	(57.3)
Total Capacity Scrubbed				
Existing	3.828	(27.7)	3.816	(27.8)
NSPS	9.312	(55.3)	9.308	(55.3)
ANSPS	9.230	(57.2)	8.979	(58.0)
National				
Capacity Fully Scrubbed				
Existing	2.029	(90.0)	2.030	(90.0)
NSPS	-	-	-	-
ANSPS	0.209	(90.0)	0.207	(90.0)
Capacity Partially Scrubbed				
Existing	52.637	(56.8)	53.374	(56.3)
NSPS	34.741	(50.9)	34.307	(51.0)
ANSPS	55.541	(61.0)	114.161	(63.6)
Total Capacity Scrubbed				
Existing	54.666	(58.0)	55.404	(57.5)
NSPS	34.741	(50.9)	34.307	(51.0)
ANSPS	55.750	(61.1)	114.368	(63.6)

SLUDGE GENERATED
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING
(10^3 tons)

	1990	1995
New England	897.2	870.2
Middle Atlantic	2,863.3	4,279.5
South Atlantic	5,260.3	8,256.6
EAST	9,020.8	13,406.3
EAST NORTH CENTRAL	2,809.9	3,622.3
EAST SOUTH CENTRAL	3,703.9	5,721.7
WEST NORTH CENTRAL	212.2	225.5
WEST SOUTH CENTRAL	2,341.8	2,331.3
Mountain	1,221.2	1,168.2
Pacific	18.7	0.2
WEST	1,239.9	1,168.4
TOTAL	19,328.4	26,475.4

UTILITY CAPITAL COSTS*
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
DRY SCRUBBING

(10^9 $'s)
(using 1978 dollars)

	1990	1995
National		
New Generation Capacity	304.6	479.9
Nuclear (GW)	140.2 (128.2)	211.3 (192.8)
Coal (GW)	150.7 (212.5)	251.9 (355.7)
NSPS	54.3 (76.4)	54.3 (76.4)
ANSPS	96.4 (136.2)	197.6 (279.3)
Oil/Gas	13.7 (40.1)	16.7 (48.1)
Combined Cycle (GW)	1.3 (2.8)	2.2 (4.8)
Turbine (GW)	12.4 (37.3)	14.5 (43.3)
Long Distance Transmission	7.4	8.4
Local Transmission and Distribution	179.2	269.8
Scrubbers (GW)	8.7 (139.5)	12.0 (213.8)
NSPS	2.0 (34.7)	2.0 (34.3)
ANSPS	2.4 (55.8)	5.7 (114.4)
Retrofit	4.3 (49.0)	4.3 (49.7)
Conversion to Western Coal	0.1	0.1
Total	500.0	770.3
Average Plant Cost		
Nuclear	1,093.6	1,096.0
Coal		
NSPS	710.7	710.7
ANSPS	707.8	707.5
Total	709.2	708.2
Oil/Gas		
Combined Cycle	464.3	458.3
Turbines	332.4	334.9
Total	341.6	347.2
Average Scrubber Cost		
NSPS	57.6	58.3
ANSPS	43.0	49.8
Retrofit	87.8	86.5
Total	62.4	56.1

(GW) -- Gigawatts.

* Gigawatts figures represent capacity built after 1975 rather than total.

COAL CONSUMPTION BY SECTOR UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^6 tons)

Sector	1990	1995
Electric Utility	925.6	1,178.5
Scrubbed	276.2	353.5
Not Scrubbed	649.4	825.0
Industrial	278.8	321.5
Metallurgical	99.9	104.1
Residential/Commercial	0.7	0.4
Synthetics	56.6	88.4
Export	76.9	80.5
Total	1,438.6	1,773.5

1990 COAL CONSUMPTION BY SECTOR UNDER CURRENT STANDARD
OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	352.1	375.9	197.6	925.6
Scrubbed	-	5.4	174.2	96.6	276.2
Not Scrubbed	-	346.7	201.7	101.0	649.4
Industrial	-	184.5	2.9	91.5	278.8
Metallurgical	68.7	-	31.2	-	99.9
Residential/Commercial	-	0.2	0.5	-	0.7
Synthetics	-	2.6	28.0	25.9	56.6
Export	60.9	2.7	3.8	9.4	76.9
Total	129.6	542.2	442.4	324.4	1,438.6

1995 COAL CONSUMPTION BY SECTOR UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	542.0	425.0	211.5	1,178.5
Scrubbed	-	5.3	234.5	113.7	353.5
Not Scrubbed	-	536.7	190.5	97.9	825.0
Industrial	-	213.2	2.1	106.2	321.5
Metallurgical	71.5	-	32.7	-	104.1
Residential/Commercial	-	0.1	0.3	-	0.4
Synthetics	-	5.3	36.9	46.3	88.4
Export	63.8	2.8	4.1	9.7	80.5
Total	135.3	763.4	501.0	373.7	1,773.5

ANNUAL SO_2 EMISSIONS UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^3 tons)

	1975	1990	1995
New England			
Coal Plants			
Existing	48.4	139.1	106.3
NSPS	-	-	-
ANSPS	-	-	36.4
Oil/Gas Plants	101.8	109.0	50.4
Total	150.2	248.0	193.0
Middle Atlantic			
Coal Plants			
Existing	1,835.9	1,480.9	1,449.9
NSPS	-	101.0	101.0
ANSPS	-	360.5	762.6
Oil/Gas Plants	371.1	307.7	108.8
Total	2,207.6	2,250.1	2,422.3
South Atlantic			
Coal Plants			
Existing	2,632.2	3,102.7	3,036.3
NSPS	-	172.7	184.6
ANSPS	-	701.3	1,566.7
Oil/Gas Plants	746.1	476.5	274.3
Total	3,378.3	4,453.2	5,061.9
East			
Coal Plants			
Existing	4,516.5	4,722.7	4,592.5
NSPS	-	273.7	285.6
ANSPS	-	1,061.8	2,365.7
Oil/Gas Plants	1,219.6	893.2	433.5
Total	5,736.1	6,951.3	7,677.2
EAST NORTH CENTRAL			
Coal Plants			
Existing	6,771.8	4,794.4	4,536.1
NSPS	-	281.9	256.1
ANSPS	-	248.1	584.7
Oil/Gas Plants	103.4	117.8	79.8
Total	6,885.2	5,442.2	5,456.6

ANNUAL SO_2 EMISSIONS UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^3 tons)

	1975	1990	1995
EAST SOUTH CENTRAL			
Coal Plants			
Existing	3,351.5	2,263.0	2,178.8
NSPS	-	242.5	262.9
ANSPS	-	619.5	1,037.0
Oil/Gas Plants	43.2	74.5	59.6
Total	3,394.7	3,199.4	3,538.3
WEST NORTH CENTRAL			
Coal Plants			
Existing	1,491.5	1,763.5	1,689.5
NSPS	-	360.3	374.1
ANSPS	-	248.4	557.4
Oil/Gas Plants	41.4	33.3	38.2
Total	1,532.9	2,405.5	2,657.2
WEST SOUTH CENTRAL			
Coal Plants			
Existing	203.7	150.0	150.0
NSPS	-	696.4	696.3
ANSPS	-	780.7	1,479.1
Oil/Gas Plants	209.0	545.7	305.3
Total	412.7	2,172.8	2,630.7
Mountain			
Coal Plants			
Existing	322.9	341.1	294.9
NSPS	-	159.5	151.9
ANSPS	-	519.7	800.4
Oil/Gas Plants	25.2	20.6	12.4
Total	358.1	1,040.9	1,259.6
Pacific			
Coal Plants			
Existing	47.6	38.3	35.7
NSPS	-	17.5	17.5
ANSPS	-	123.0	308.5
Oil/Gas Plants	148.1	97.6	10.7
Total	195.7	276.4	468.5

ANNUAL SO_2 EMISSIONS UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^3 tons)

	1975	1990	1995
REST OF WEST			
Coal Plants			
Existing	380.5	379.4	330.6
NSPS	-	177.0	169.4
ANSPS	-	642.7	2,279.5
Oil/Gas Plants	173.3	118.2	23.1
Total	553.8	1,317.2	1,728.1
NATIONAL			
Coal Plants			
Existing	16,915.4	14,072.8	13,477.3
NSPS	-	2,031.8	2,044.4
ANSPS	-	3,601.2	7,132.8
Oil/Gas Plants	1,789.9	1,782.6	1,033.6
Total	18,705.3	21,488.4	23,688.0

Source for 1975 data: EPA National Emissions Data System, Computer Printout, May 1, 1978.

ANNUAL NATIONAL NO_x AND PARTICULATE EMISSIONS UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU WET SCRUBBING

(10^3 tons)

	1990		1995	
	NO_x	TSP	NO_x	TSP
Oil/Gas	1,279.9	154.4	773.3	92.4
Coal	7,359.8	1,000.3	9,197.7	1,266.5
Existing	3,859.5	507.0	3,581.7	471.6
NSPS	1,286.6	181.0	1,291.4	181.5
ANSPS	2,213.7	312.3	4,324.6	613.4
Total	8,639.7	1,154.7	9,970.9	1,358.9

NATIONAL UTILITY FUEL CONSUMPTION UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
NATIONAL			
Coal	9.3	20.01	25.33
Existing	9.3	10.14	9.43
NSPS	-	3.62	3.63
ANSPS	-	6.25	12.27
Oil/Gas	6.2	4.10	2.65
Nuclear	1.7	9.69	13.48
Hydro and Other	2.0	3.39	3.41
Total	19.2	37.19	44.86
Percent of Total			
Coal	48.4	53.8	56.5
Oil/Gas	32.3	11.0	5.9
Nuclear	8.9	26.1	30.0
Hydro and Other	10.4	9.1	7.6

UTILITY OIL/GAS CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England	0.425	0.242	0.122
Middle Atlantic	0.824	0.729	0.299
South Atlantic	1.010	0.802	0.475
EAST	2.259	1.773	0.896
EAST NORTH CENTRAL	0.317	0.377	0.265
EAST SOUTH CENTRAL	0.112	0.154	0.141
WEST NORTH CENTRAL	0.289	0.109	0.131
WEST SOUTH CENTRAL	2.162	1.185	0.672
Mountain	0.249	0.085	0.069
Pacific	0.787	0.421	0.474
WEST	1.036	0.506	0.543
TOTAL	6.175	4.104	2.648
Oil for Coal Transportation		0.290	0.387
TOTAL		4.394	3.035

UTILITY COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England			
High Sulfur		0.198	0.148
Medium Sulfur		0.004	0.052
Low Sulfur		-	-
Total	0.047	0.202	0.200
Middle Atlantic			
High Sulfur		0.173	0.155
Medium Sulfur		1.444	1.582
Low Sulfur		0.250	0.741
Total	1.076	1.866	2.478
South Atlantic			
High Sulfur		0.796	1.119
Medium Sulfur		2.022	2.709
Low Sulfur		1.115	1.418
Total	1.789	3.932	5.246
EAST			
High Sulfur		1.166	1.423
Medium Sulfur		3.470	4.342
Low Sulfur		1.365	2.159
Total	2.912	6.001	7.924
EAST NORTH CENTRAL			
High Sulfur		1.527	1.698
Medium Sulfur		1.527	1.494
Low Sulfur		1.100	1.329
Total	2.670	4.154	4.521
EAST SOUTH CENTRAL			
High Sulfur		1.468	1.411
Medium Sulfur		0.526	0.931
Low Sulfur		0.843	1.133
Total	1.328	2.837	3.474
WEST NORTH CENTRAL			
High Sulfur		0.390	0.378
Medium Sulfur		0.694	0.658
Low Sulfur		0.835	1.333
Total	0.783	1.918	2.369

UTILITY COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
WEST SOUTH CENTRAL			
High Sulfur		-	-
Medium Sulfur		0.903	0.903
Low Sulfur		1.690	2.854
Total	0.119	2.593	3.757
Mountain			
High Sulfur		-	-
Medium Sulfur		0.881	0.853
Low Sulfur		1.357	1.857
Total	0.615	2.238	2.710
Pacific			
High Sulfur		-	-
Medium Sulfur		0.063	0.031
Low Sulfur		0.202	0.543
Total	0.069	0.265	0.574
REST OF WEST			
High Sulfur		-	-
Medium Sulfur		0.944	0.884
Low Sulfur		1.559	2.400
Total	0.685	2.503	3.284
NATIONAL			
High Sulfur		4.550	4.909
Medium Sulfur		8.064	9.212
Low Sulfur		7.391	11.208
Total	8.719	20.006	25.329

1995 ANSPS COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Maine/Vt./New Hampshire				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Mass./Conn./Rhode Island				
ANSPS (Part)	1.384	BF	0.046	Ohio
ANSPS (Part)	0.445	BG	0.015	Ohio
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	1.829		0.061	
Pennsylvania, West				
ANSPS (Part)	3.159	BF	0.156	Northern West Virginia
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	4.939	BB	0.180	Southern West Virginia
Total	8.098		0.336	
Pennsylvania, East/N.J./N.Y.DS				
ANSPS (Part)	4.671	BF	0.238	Pennsylvania
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	15.052	BB	0.416	Northern West Virginia
Total	19.723		0.655	
New York, Upstate				
ANSPS (Part)	2.259	BF	0.120	Pennsylvania
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	4.816	BB	0.160	Pennsyulvania & Northern West Virginia
Total	7.074		0.281	
Virginia/Md./Del.				
ANSPS (Part)	1.005	BF	0.054	Maryland
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	8.111	BB	0.250	Southern West Virginia
Total	9.116		0.304	
West Virginia				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	

1995 ANSPS COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
North & South Carolina				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	12.637	BB	0.415	Southern West Virginia
Total	12.637		0.415	
Georgia/North Florida				
ANSPS (Part)	4.801	BF	0.293	Illinois
ANSPS (Full)	7.439	BG	0.428	Illinois
ANSPS (No Scrub)	6.959	BB	0.204	East Kentucky & Virginia
Total	19.199		0.904	
South Florida				
ANSPS (Part)	11.213	BF	0.638	Pennsylvania
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	9.412	BB	0.349	East Kentucky
Total	20.625		0.987	
Ohio, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Ohio, Central				
ANSPS (Part)	0.034	BF	0.002	Illinois
ANSPS (Part)	5.453	BG	0.314	Illinois
ANSPS (No Scrub)	2.952	BB	0.098	East Kentucky
Total	8.439		0.414	
Ohio, South				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	5.202	BB	0.220	Southern West Virginia
Total	5.202		0.220	
Michigan				
ANSPS (Part)	-	--	-	-
ANSPS (No Scrub)	5.152	BB	0.175	East Kentucky
ANSPS (No Scrub)	1.596	SA	0.093	West Montana
Total	6.748		0.268	

1995 ANSPS COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Illinois				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Indiana				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	0.437	BB	0.013	East Kentucky
Total	0.437		0.013	
Wisconsin				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	2.533	BB	0.084	Wyoming & South Colorado
ANSPS (No Scrub)	0.301	SA	0.010	West Montana
Total	2.834		0.095	
Kentucky, East				
ANSPS (Part)	1.674	BG	0.096	Indiana
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	2.064	BB	0.373	Indiana
Total	3.736		0.157	
Kentucky, West				
ANSPS (Part)	-	--	-	-
ANSPS (No Scrub)	7.483	BB	0.241	Wyoming
ANSPS (No Scrub)	6.802	SB	0.373	Wyoming
Total	14.284		0.614	
Tennessee, East				
ANSPS (Part)	0.527	BG	0.018	Indiana
ANSPS (Part)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	0.527		0.018	
Tennessee, West				
ANSPS (Part)	5.536	BG	0.243	Illinois
ANSPS (Part)	5.712	SF	0.319	Wyoming
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	2.942	SB	0.161	Wyoming
Total	14.190		0.724	

1995 ANSPS COAL CONSUMPTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Alabama/Mississippi				
ANSPS (Part)	1.012	BD	0.035	Alabama
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	5.206	BB	0.181	Wyoming
Total	6.218		0.216	
North & South Dakota/Minnesota				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	3.091	SB	0.100	West Montana
ANSPS (No Scrub)	1.243	LA	0.070	North Dakota
ANSPS (No Scrub)	1.254	LB	0.071	North Dakota
Total	5.588		0.241	
Kansas/Nebraska				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	3.007	BB	0.090	Wyoming
ANSPS (No Scrub)	2.231	SB	0.122	Wyoming
Total	5.237		0.213	
Iowa				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	0.648	BB	0.020	Wyoming
ANSPS (No Scrub)	6.096	SB	0.334	West Montana
Total	6.744		0.354	
Missouri				
ANSPS (Part)	-	--	-	-
ANSPS (No Scrub)	0.886	BB	0.027	South Colorado & Wyoming
ANSPS (No Scrub)	2.142	SB	0.117	West Montana
Total	3.027		0.145	
Arkansas/Oklahoma/Louisiana				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	8.799	BB	0.278	Utah
ANSPS (No Scrub)	9.292	SB	0.510	West Montana
Total	18.090		0.787	

1995 ANSPS COAL CONSUMPTION UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Texas				
ANSPS (Part)	0.001	SF	0.000	Wyoming
ANSPS (Part)	8.293	LF	0.478	Texas
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	30.452	BB	1.174	South Colorado
ANSPS (No Scrub)	0.472	SB	0.026	West Montana
Total	39.218		1.678	
Idaho				
ANSPS (Part)	-	--	-	-
ANSPS (No Scrub)	7.211	SB	0.397	Wyoming
ANSPS (No Scrub)	0.360	BB	0.012	New Mexico
Total	7.572		0.409	
Montana				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	6.762	SA	0.395	West Montana
ANSPS (No Scrub)	3.349	SB	0.196	West Montana
Total	10.111		0.591	
Wyoming				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.329	SD	0.020	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	0.329		0.020	
Utah				
ANSPS (Part)	-	--	-	-
ANSPS (No Scrub)	1.298	BB	0.072	Utah
ANSPS (No Scrub)	0.664	SB	0.039	West Montana
Total	1.962		0.111	
Nevada				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
ANSPS (No Scrub)	2.880	BB	0.161	Utah
Total	2.880		0.161	

1995 ANSPS COAL CONSUMPTION UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Colorado				
ANSPS (Part)	0.364	BA	0.012	South Colorado
ANSPS (Part)	0.021	BB	0.001	South Colorado
ANSPS (Part)	0.269	BD	0.009	New Mexico
Total	0.654		0.023	
Arizona				
ANSPS (Part)	0.064	BB	0.003	New Mexico
ANSPS (Part)	3.859	BD	0.205	New Mexico
ANSPS (No Scrub)	0.474	BA	0.014	New Mexico
Total	4.397		0.223	
New Mexico				
ANSPS (Part)	2.178	BD	0.118	New Mexico
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	2.178		0.118	
Washington/Oregon				
ANSPS (Part)	0.005	BD	0.000	Wyoming
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	0.009	BB	0.001	Utah
ANSPS (No Scrub)	8.783	SB	0.513	West Montana
Total	8.798		0.514	
California, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
California, South				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	

AGGREGATED REGIONAL COAL PRODUCTION UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU WET SCRUBBING (10^6 tons)

	1975	1990	1995
Northern Appalachia	158.2	196.4	253.5
Central Appalachia	211.1	207.9	222.4
Southern Appalachia	22.9	15.0	13.3
APPALACHIA	392.1	419.3	489.2
MIDWEST	138.6	347.9	404.1
Eastern Northern Great Plains	8.5	29.4	35.4
Western Northern Great Plains	45.2	433.2	619.7
NORTHERN GREAT PLAINS	53.7	462.6	655.2
Central West	9.5	4.3	8.5
Gulf	10.0	68.9	61.8
Rockies	14.0	87.0	110.3
Southwest	15.7	45.0	47.8
Northwest	4.5	5.6	1.9
REST OF WEST	50.0	210.8	230.3
TOTAL	634.6	1,440.7	1,778.8

REGIONAL COAL PRODUCTION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia			
Metallurgical	13.5	23.3	30.6
High Sulfur	107.1	63.5	67.5
Medium Sulfur	37.4	109.2	154.6
Low Sulfur	0.2	0.5	0.7
Total	158.1	196.4	253.5
Central Appalachia			
Metallurgical	83.0	148.7	177.0
High Sulfur	23.6	4.2	-
Medium Sulfur	91.9	34.6	23.6
Low Sulfur	12.6	20.4	21.7
Total	211.1	207.9	222.4
Southern Appalachia			
Metallurgical	1.7	5.5	6.5
High Sulfur	-	-	-
Medium Sulfur	21.2	4.3	0.7
Low Sulfur	-	5.2	6.1
Total	22.9	15.0	13.3
APPALACHIA			
Metallurgical	98.2	177.5	214.2
High Sulfur	130.7	67.7	67.5
Medium Sulfur	150.5	148.1	179.0
Low Sulfur	12.8	26.1	28.5
Total	392.1	419.3	489.2
MIDWEST			
Metallurgical	-	-	-
High Sulfur	131.6	248.7	291.2
Medium Sulfur	7.1	97.7	111.2
Low Sulfur	-	1.4	1.7
Total	138.6	347.9	404.1
Eastern Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	0.3	6.6	10.3
Medium Sulfur	7.8	15.6	16.6
Low Sulfur	0.4	7.1	8.6
Total	8.6	29.4	35.4

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^6 tons)

	1975	1990	1995
Western Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	7.6	109.0	156.3
Low Sulfur	37.6	324.2	463.5
Total	45.2	433.2	619.7
NORTHERN GREAT PLAINS			
Metallurgical	-	-	-
High Sulfur	0.3	6.6	10.3
Medium Sulfur	15.4	124.6	172.9
Low Sulfur	38.0	331.3	472.0
Total	53.8	462.6	655.2
Central West			
Metallurgical	0.3	0.1	0.1
High Sulfur	8.4	1.9	4.9
Medium Sulfur	0.8	1.3	2.3
Low Sulfur	-	1.0	1.2
Total	9.5	4.3	8.5
Gulf			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	10.0	68.9	61.8
Low Sulfur	-	-	-
Total	10.0	68.9	61.8
Rockies			
Metallurgical	2.9	5.5	4.6
High Sulfur	-	-	-
Medium Sulfur	0.8	6.8	10.0
Low Sulfur	10.4	74.6	95.7
Total	14.1	87.0	110.3
Southwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	15.2	16.0	1.7
Low Sulfur	0.5	29.0	46.1
Total	15.7	45.0	47.8

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^6 tons)

	1975	1990	1995
Northwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	3.7	5.6	1.9
Low Sulfur	0.8	-	-
Total	4.5	5.6	1.9
WEST			
Metallurgical	3.3	5.7	4.7
High Sulfur	8.4	1.9	4.9
Medium Sulfur	30.4	98.6	77.7
Low Sulfur	11.7	104.6	143.0
Total	53.7	210.8	230.3
TOTAL			
Metallurgical	101.7	183.2	218.9
High Sulfur	147.8	325.0	374.0
Medium Sulfur	197.0	469.1	540.7
Low Sulfur	62.5	463.5	645.2
Total	509.0	1,440.7	1,778.8

MINE-MOUTH PRICE
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING

($\$/10^6$ Btu)
(1978 $'s)

	1990	1995
Northern Appalachia		
High Sulfur	1.07	1.11
Medium Sulfur	1.16	1.21
Low Sulfur	1.62	1.70
Regional Average	1.19	1.25
Central Appalachia		
High Sulfur	1.13	1.19
Medium Sulfur	1.31	1.38
Low Sulfur	1.60	1.68
Regional Average	1.56	1.66
Southern Appalachia		
High Sulfur	--	--
Medium Sulfur	1.29	1.50
Low Sulfur	1.64	1.71
Regional Average	1.55	1.71
Midwest		
High Sulfur	1.01	1.11
Medium Sulfur	1.27	1.24
Low Sulfur	1.66	1.69
Regional Average	1.09	1.46
Eastern Northern Great Plains		
High Sulfur	0.42	1.08
Medium Sulfur	0.43	1.33
Low Sulfur	0.51	1.74
Regional Average	0.45	1.16
Western Northern Great Plains (Bituminous)		
High Sulfur	--	--
Medium Sulfur	0.89	0.98
Low Sulfur	1.12	1.22
Regional Average	1.04	1.14
Western Northern Great Plains (Subbituminous)		
High Sulfur	--	--
Medium Sulfur	0.42	0.40
Low Sulfur	0.54	0.55
Regional Average	0.51	0.51

MINE-MOUTH PRICE
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Central West		
High Sulfur	1.10	1.17
Medium Sulfur	1.31	1.38
Low Sulfur	1.54	1.62
Regional Average	1.29	1.31
Gulf		
High Sulfur	--	--
Medium Sulfur	0.56	0.99
Low Sulfur	--	--
Regional Average	0.56	0.99
Rocky Mountain		
High Sulfur	--	--
Medium Sulfur	0.96	1.06
Low Sulfur	1.10	1.22
Regional Average	1.11	1.22
Southwest		
High Sulfur	--	--
Medium Sulfur	0.71	0.99
Low Sulfur	0.64	0.85
Regional Average	0.67	0.85
Northwest		
High Sulfur	--	--
Medium Sulfur	0.89	0.91
Low Sulfur	--	--
Regional Average	0.89	0.91
National		
High Sulfur	1.02	1.08
Medium Sulfur	0.98	1.04
Low Sulfur	0.79	0.81
Regional Average	1.04	1.08

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER CURRENT STANDARD OF 1.0 LBS. SO_2/MMBTU
WET SCRUBBING
($\$/10^6$ Btu)
(1978 $'s)

	1990	1995
Northeast		
High Sulfur	1.40	1.46
Medium Sulfur	1.99	1.59
Low Sulfur	--	--
Regional Average	1.41	1.49
Middle Atlantic		
High Sulfur	1.33	1.36
Medium Sulfur	1.47	1.52
Low Sulfur	1.98	2.11
Regional Average	1.53	1.68
South Atlantic		
High Sulfur	1.34	1.41
Medium Sulfur	1.64	1.67
Low Sulfur	1.97	2.03
Regional Average	1.67	1.71
East North Central		
High Sulfur	1.21	1.28
Medium Sulfur	1.48	1.54
Low Sulfur	1.78	1.85
Regional Average	1.46	1.54
East South Central		
High Sulfur	1.22	1.29
Medium Sulfur	1.48	1.41
Low Sulfur	1.72	1.74
Regional Average	1.42	1.47
West North Central		
High Sulfur	1.16	1.22
Medium Sulfur	1.10	1.10
Low Sulfur	1.21	1.23
Regional Average	1.16	1.19

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU

WET SCRUBBING
($\$/10^6$ Btu)
(1978 $'s)

	1990	1995
West South Central		
High Sulfur	--	--
Medium Sulfur	0.67	1.10
Low Sulfur	1.48	1.55
Regional Average	1.20	1.44
Mountain		
High Sulfur	--	--
Medium Sulfur	0.70	0.94
Low Sulfur	0.96	0.93
Regional Average	0.86	0.93
Pacific		
High Sulfur	--	--
Medium Sulfur	1.04	1.09
Low Sulfur	1.11	1.12
Regional Average	1.09	1.12
National Total		
High Sulfur	1.25	1.32
Medium Sulfur	1.31	1.43
Low Sulfur	1.51	1.54
Regional Average	1.37	1.46

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

1990 NATIONAL COAL TRANSPORTATION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^6 tons)

Origin	Destination New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.6	104.4	54.9	29.7	-	-	-	-	-	200.6
Central Appalachia	-	28.7	124.2	58.9	13.6	0.6	0.9	-	-	226.9
Southern Appalachia	-	-	8.1	7.0	-	-	-	-	-	15.1
Midwest	-	-	52.5	160.9	112.6	21.8	-	-	-	347.9
Central West	-	-	-	-	2.0	1.4	0.6	-	0.3	4.3
Gulf	-	-	-	-	-	-	68.9	-	-	68.9
Eastern Northern Great Plains	-	-	-	-	-	29.1	-	0.3	-	29.4
Western Northern Great Plains	-	-	-	22.1	32.5	71.1	187.8	103.1	16.6	433.2
Rocky Mountains	-	-	-	27.3	-	4.6	29.3	17.5	8.3	87.0
Southwest	-	-	-	-	-	-	7.9	33.1	4.0	45.0
Northwest	-	-	-	-	-	-	-	-	5.6	5.6
Total	11.6	133.1	239.8	305.9	160.7	128.6	295.4	154.0	34.8	1,463.9

1995 NATIONAL COAL TRANSPORTATION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^6 tons)

Origin	Destination									
	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.9	131.8	81.8	-	-	-	-	-	-	225.5
Central Appalachia	-	31.8	137.5	65.2	7.7	0.7	-	-	-	242.9
Southern Appalachia	-	-	4.7	-	6.6	-	-	-	-	11.3
Midwest	-	-	75.3	183.6	123.1	22.1	-	-	-	404.1
Central West	-	-	-	-	1.6	3.5	3.8	-	-	8.9
Gulf	-	-	-	-	-	-	61.8	-	-	61.8
Eastern Northern Great Plains	-	-	-	-	-	35.3	-	0.1	-	35.4
Western Northern Great Plains	-	-	-	25.4	70.2	94.5	243.4	147.1	39.1	619.7
Rocky Mountains	-	-	-	25.0	-	4.2	51.5	18.8	10.9	110.4
Southwest	-	-	-	-	-	-	14.0	31.2	2.7	47.9
Northwest	-	-	-	-	-	-	-	-	1.9	1.9
Total	11.9	163.6	299.3	299.2	209.2	160.3	374.5	197.2	54.6	1,769.8

1990 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^6 tons)

Origin	Destination New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	3.71	-	-	-	-	-	-	3.71
South Atlantic	-	5.06	-	-	-	-	-	-	-	5.06
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	1.85	-	-	-	-	-	-	1.85
West North Central	-	-	-	1.34	-	-	-	-	-	1.34
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	13.00	13.00
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	5.06	5.56	1.34	-	-	-	-	13.00	24.96

1995 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	3.71	-	-	-	-	-	-	3.71
South Atlantic	-	3.82	-	-	-	-	-	-	-	3.82
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	-	-	-	-	-	-	-	-
West North Central	-	-	-	3.45	-	-	-	-	-	3.45
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	12.67	12.67
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	3.82	3.71	3.45	-	-	-	-	12.67	23.65

NATIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU WET SCRUBBING

(GW (percent capacity factor))

	1975	1990	1995
NATIONAL			
Nuclear	37.2	165.3 (66.9)	230.0 (66.9)
Coal	183.6	406.3 (57.3)	551.6 (53.6)
Existing*	183.6	197.9 (58.0)	197.9 (53.9)
NSPS	-	75.9 (56.4)	75.9 (56.5)
ANSPS	-	132.5 (56.7)	277.7 (52.6)
Oil/Gas	192.1	211.8 (18.9)	186.6 (13.2)
Steam*	147.3	140.9 (23.7)	106.6 (17.0)
Combined Cycle	2.7	5.3 (21.9)	7.5 (20.0)
Turbines	42.2	65.6 (8.2)	72.5 (6.9)
Hydro and Others	68.3	87.8 (44.0)	89.5 (43.5)
Total	481.2	871.1 (48.4)	1,057.4 (48.5)
Percent of Total			
Nuclear	7.7	19.0	21.7
Coal	38.2	46.6	52.2
Oil/Gas	39.9	24.3	17.6
Other	14.2	10.1	8.5

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* Powerplants under ESECA orders to convert from oil and/or gas to coal (14.3 GW) are assumed to convert by 1985.

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
New England		
Nuclear	10.1 (70.0)	14.0 (70.0)
Coal	3.9 (56.4)	5.7 (38.1)
Existing	3.9 (56.4)	3.9 (38.2)
NSPS	-	-
ANSPS	-	-
Oil/Gas	8.8 (28.5)	6.0 (20.9)
Steam	7.7 (30.7)	3.8 (27.4)
Combined Cycle	0.4 (30.6)	0.4 (30.6)
Turbines	0.8 (5.0)	1.8 (5.0)
Hydro and Others	2.9 (18.1)	2.9 (18.1)
Total	25.8 (47.8)	28.7 (47.8)
Percent of Total		
Nuclear	39.3	49.0
Coal	15.2	19.9
Oil/Gas	34.2	21.0
Other	11.3	10.1
Middle Atlantic		
Nuclear	26.2 (65.3)	36.4 (65.3)
Coal	37.4 (57.2)	58.1 (49.2)
Existing	20.1 (60.2)	20.1 (56.8)
NSPS	3.1 (67.1)	3.1 (67.1)
ANSPS	14.2 (50.8)	34.9 (43.3)
Oil/Gas	33.6 (21.3)	21.6 (13.0)
Steam	21.1 (29.8)	8.2 (25.0)
Combined Cycle	0.4 (29.2)	0.4 (12.9)
Turbines	12.1 (6.1)	13.0 (5.4)
Hydro and Others	8.0 (46.1)	9.0 (41.4)
Total	105.1 (46.9)	125.1 (47.1)
Percent of Total		
Nuclear	24.9	29.1
Coal	35.6	46.4
Oil/Gas	31.9	17.3
Other	7.6	7.2

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU WET SCRUBBING (GW (percent capacity factor))

	1990	1995
South Atlantic		
Nuclear	32.2 (66.2)	44.7 (66.2)
Coal	81.6 (57.9)	116.5 (54.0)
Existing	46.9 (63.1)	46.9 (59.3)
NSPS	8.0 (42.8)	8.0 (46.2)
ANSPS	26.7 (53.3)	61.6 (51.0)
Oil/Gas	38.3 (20.6)	32.7 (13.8)
Steam	22.7 (27.0)	18.3 (18.3)
Combined Cycle	0.6 (35.9)	0.6 (21.3)
Turbines	15.0 (10.2)	13.8 (7.4)
Hydro and Others	10.4 (23.8)	10.5 (23.7)
Total	162.4 (48.6)	204.4 (48.7)
Percent of Total		
Nuclear	19.8	21.9
Coal	50.2	57.0
Oil/Gas	23.6	16.0
Other	6.4	5.1
East North Central		
Nuclear	33.0 (67.7)	45.9 (67.7)
Coal	86.1 (54.7)	98.5 (52.2)
Existing	62.9 (57.9)	62.9 (54.6)
NSPS	11.9 (47.7)	11.9 (42.1)
ANSPS	11.3 (44.0)	23.7 (51.1)
Oil/Gas	19.1 (17.9)	17.3 (13.2)
Steam	10.7 (25.0)	9.5 (17.5)
Combined Cycle	0.2 (19.1)	0.2 (8.0)
Turbines	8.2 (8.7)	7.5 (8.0)
Hydro and Others	1.7 (16.9)	1.7 (16.9)
Total	139.9 (52.3)	163.4 (52.1)
Percent of Total		
Nuclear	23.6	28.1
Coal	61.5	60.3
Oil/Gas	13.7	10.6
Other	1.2	1.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR)
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
East South Central		
Nuclear	23.0 (67.4)	32.0 (67.4)
Coal	61.2 (54.5)	77.6 (52.4)
Existing	30.2 (53.0)	30.2 (49.4)
NSPS	8.4 (58.2)	8.4 (63.8)
ANSPS	22.6 (55.0)	39.0 (52.3)
Oil/Gas	13.3 (10.2)	14.9 (7.9)
Steam	3.0 (17.1)	3.0 (11.2)
Combined Cycle	-	-
Turbines	10.4 (8.2)	12.0 (7.2)
Hydro and Others	6.7 (41.6)	6.8 (40.9)
Total	104.2 (50.8)	131.3 (50.4)
Percent of Total		
Nuclear	22.1	24.4
Coal	58.7	59.1
Oil/Gas	12.8	11.3
Other	6.4	5.2
West North Central		
Nuclear	9.1 (65.0)	12.6 (65.0)
Coal	42.1 (51.3)	52.2 (51.5)
Existing	18.4 (51.3)	18.4 (45.9)
NSPS	13.2 (53.0)	13.2 (55.1)
ANSPS	10.4 (49.0)	20.6 (54.1)
Oil/Gas	12.3 (7.0)	15.3 (7.0)
Steam	4.3 (6.9)	4.3 (6.9)
Combined Cycle	0.1 (8.0)	0.1 (8.0)
Turbines	7.9 (7.0)	11.0 (7.0)
Hydro and Others	4.1 (41.2)	4.1 (41.2)
Total	67.5 (44.5)	84.2 (44.9)
Percent of Total		
Nuclear	13.5	15.0
Coal	62.3	62.0
Oil/Gas	18.2	18.2
Other	6.1	4.9

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
West South Central		
Nuclear	13.1 (65.0)	18.3 (65.0)
Coal	47.3 (64.8)	80.5 (54.9)
Existing	2.2 (64.4)	2.2 (64.4)
NSPS	20.9 (65.0)	20.9 (65.4)
ANSPS	24.1 (64.7)	57.3 (50.9)
Oil/Gas	59.3 (19.7)	47.6 (12.5)
Steam	55.7 (20.4)	44.0 (12.9)
Combined Cycle	1.4 (12.9)	1.4 (10.4)
Turbines	2.2 (6.0)	2.2 (6.0)
Hydro and Others	2.5 (19.5)	2.5 (19.5)
Total	122.2 (42.0)	148.8 (42.0)
Percent of Total		
Nuclear	10.7	12.3
Coal	38.7	54.1
Oil/Gas	48.5	32.0
Other	2.0	1.7
Mountain		
Nuclear	4.3 (65.4)	5.9 (65.4)
Coal	41.5 (62.9)	51.9 (61.2)
Existing	11.8 (60.7)	11.8 (52.8)
NSPS	10.0 (58.4)	10.0 (56.0)
ANSPS	19.7 (66.4)	30.1 (66.3)
Oil/Gas	6.4 (12.1)	6.5 (9.0)
Steam	2.2 (16.3)	1.6 (6.1)
Combined Cycle	0.5 (13.7)	0.5 (13.7)
Turbines	3.6 (9.3)	4.4 (9.5)
Hydro and Others	9.2 (45.9)	9.6 (45.5)
Total	61.3 (55.3)	73.9 (54.9)
Percent of Total		
Nuclear	7.0	8.0
Coal	67.6	70.2
Oil/Gas	10.4	8.8
Other	4.1	13.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
Pacific		
Nuclear	14.4 (70.0)	20.1 (70.0)
Coal	5.3 (52.9)	10.6 (64.5)
Existing	1.3 (25.0)	1.3 (25.0)
NSPS	0.5 (70.0)	0.5 (70.0)
ANSPS	3.5 (70.0)	8.8 (70.0)
Oil/Gas	20.7 (20.9)	24.7 (20.3)
Steam	13.6 (25.2)	13.9 (26.1)
Combined Cycle	1.7 (23.8)	3.9 (24.6)
Turbines	5.4 (9.2)	6.9 (6.0)
Hydro and Others	42.4 (53.1)	42.4 (53.1)
Total	82.8 (48.4)	97.8 (49.5)
Percent of Total		
Nuclear	17.4	20.6
Coal	6.4	10.8
Oil/Gas	25.0	25.3
Other	51.2	43.4
National		
Nuclear	165.3 (66.9)	230.0 (66.9)
Coal	406.3 (57.3)	551.6 (53.6)
Existing*	197.9 (58.0)	197.9 (53.8)
NSPS	75.9 (56.4)	75.9 (56.5)
ANSPS	132.5 (56.7)	277.7 (52.6)
Oil/Gas	211.8 (18.9)	186.6 (13.2)
Steam*	140.9 (23.7)	106.6 (17.0)
Combined Cycle	5.3 (21.7)	7.5 (20.0)
Turbines	65.6 (8.2)	72.5 (6.9)
Hydro and Others	87.8 (44.0)	89.5 (43.5)
Total	871.1 (48.4)	1,057.4 (48.5)
Percent of Total		
Nuclear	19.0	21.7
Coal	46.6	52.2
Oil/Gas	24.3	17.6
Other	10.1	8.5

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
New England				
Capacity Full Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	3.315	(79.8)	3.315	(79.9)
NSPS	-	-	-	-
ANSPS	-	-	1.829	(67.0)
Total Capacity Scrubbed				
Existing	3.315	(79.8)	3.315	(79.9)
NSPS	-	-	-	-
ANSPS	-	-	1.829	(67.0)
Middle Atlantic				
Capacity Fully Scrubbed				
Existing	2.245	(90.0)	2.245	(90.0)
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	3.974	(57.3)	3.972	(57.3)
NSPS	2.810	(64.1)	2.808	(64.1)
ANSPS	6.724	(64.1)	10.089	(64.1)
Total Capacity Scrubbed				
Existing	6.219	(69.1)	6.217	(69.1)
NSPS	2.810	(64.1)	2.808	(64.1)
ANSPS	6.724	(64.1)	10.089	(64.1)
South Atlantic				
Capacity Fully Scrubbed				
Existing	2.555	(90.0)	2.555	(90.0)
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	7.426	(56.7)	7.387	(57.3)
NSPS	1.932	(71.7)	1.932	(69.9)
ANSPS	4.089	(69.2)	24.458	(67.7)
Total Capacity Scrubbed				
Existing	9.981	(65.2)	9.942	(65.7)
NSPS	1.932	(71.7)	1.932	(69.9)
ANSPS	4.089	(69.2)	24.458	(67.7)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
East				
Capacity Fully Scrubbed				
Existing	4.800	(90.0)	4.800	(90.0)
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	14.715	(62.1)	14.674	(62.4)
NSPS	4.742	(67.2)	4.740	(66.5)
ANSPS	10.813	(66.0)	36.376	(66.7)
Total Capacity Scrubbed				
Existing	19.515	(69.0)	19.474	(69.2)
NSPS	4.742	(67.2)	4.740	(66.5)
ANSPS	10.813	(66.0)	36.376	(66.7)
East North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	7.419	(76.0)	7.550	(74.3)
NSPS	3.353	(61.1)	3.352	(61.0)
ANSPS	0.751	(76.0)	5.487	(76.0)
Total Capacity Scrubbed				
Existing	7.419	(76.0)	7.550	(74.3)
NSPS	3.353	(61.1)	3.352	(61.0)
ANSPS	0.751	(76.0)	5.487	(76.0)
East South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	4.971	(76.0)	4.968	(76.0)
NSPS	5.898	(73.1)	7.314	(55.5)
ANSPS	6.846	(71.2)	14.459	(68.0)
Total Capacity Scrubbed				
Existing	4.971	(76.0)	4.968	(76.0)
NSPS	5.898	(73.1)	7.314	(55.5)
ANSPS	6.846	(71.2)	14.459	(68.0)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
West North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	-	-	-	-
West South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	1.110	(64.1)	1.109	(64.1)
NSPS	5.096	(64.1)	5.094	(64.1)
ANSPS	8.294	(64.1)	8.294	(64.1)
Total Capacity Scrubbed				
Existing	1.110	(64.1)	1.109	(64.1)
NSPS	5.096	(64.1)	5.094	(64.1)
ANSPS	8.294	(64.1)	8.294	(64.1)
Mountain				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	1.994	(27.7)	1.992	(27.7)
NSPS	9.313	(58.5)	9.308	(58.5)
ANSPS	7.076	(62.2)	7.083	(62.1)
Total Capacity Scrubbed				
Existing	1.994	(27.7)	1.992	(27.7)
NSPS	9.313	(58.5)	9.308	(58.5)
ANSPS	7.076	(62.2)	7.083	(62.1)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
Pacific				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	0.552	(27.7)	0.005	(27.7)
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	0.552	(27.7)	0.005	(27.7)
Rest of West				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	1.994	(27.7)	1.992	(27.7)
NSPS	9.313	(58.5)	9.308	(58.5)
ANSPS	7.628	(59.7)	7.088	(62.1)
Total Capacity Scrubbed				
Existing	1.994	(27.7)	1.992	(27.7)
NSPS	9.313	(58.5)	9.308	(58.5)
ANSPS	7.628	(59.7)	7.088	(62.1)
National				
Capacity Fully Scrubbed				
Existing	4.800	(90.0)	4.800	(90.0)
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	30.210	(65.6)	30.293	(65.3)
NSPS	33.402	(58.9)	34.810	(55.6)
ANSPS	34.297	(65.3)	71.704	(66.9)
Total Capacity Scrubbed				
Existing	35.010	(68.9)	35.093	(68.7)
NSPS	33.402	(58.9)	34.810	(55.6)
ANSPS	34.297	(65.3)	71.704	(66.9)

SLUDGE GENERATED
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING
(10^3 tons)

	1990	1995
New England	896.8	774.0
Middle Atlantic	2,617.3	2,897.8
South Atlantic	3,007.7	6,451.1
EAST	6,521.8	10,122.9
EAST NORTH CENTRAL	3,104.1	4,149.4
EAST SOUTH CENTRAL	4,433.3	5,105.0
WEST NORTH CENTRAL	211.4	226.6
WEST SOUTH CENTRAL	2,238.8	2,238.5
Mountain	1,141.0	1,113.2
Pacific	18.6	0.2
WEST	1,159.6	1,113.4
TOTAL	17,668.8	22,955.6

UTILITY CAPITAL COSTS*
UNDER CURRENT STANDARD OF 1.2 LBS. SO_2/MMBTU
WET SCRUBBING

(10^9 $'s)
(using 1978 dollars)

	1990	1995
National		
New Generation Capacity	302.1	479.4
Nuclear (GW)	140.2 (128.2)	211.3 (192.8)
Coal (GW)	147.6 (208.4)	251.1 (353.6)
NSPS	54.0 (75.9)	54.0 (75.9)
ANSPS	93.6 (132.5)	197.1 (277.7)
Oil/Gas	14.3 (41.9)	17.0 (49.0)
Combined Cycle (GW)	1.2 (2.6)	2.2 (4.8)
Turbine (GW)	13.1 (39.3)	14.8 (44.1)
Long Distance Transmission	7.1	8.7
Local Transmission and Distribution	179.1	269.8
Scrubbers (GW)	11.2 (97.0)	15.2 (135.9)
NSPS	3.4 (33.4)	3.4 (34.8)
ANSPS	3.7 (34.3)	7.8 (71.7)
Retrofit	4.0 (29.3)	4.0 (29.4)
Conversion to Western Coal	0.1	0.1
Total	499.6	773.1
Average Plant Cost		
Nuclear	1,093.6	1,096.0
Coal		
NSPS	711.5	711.5
ANSPS	706.4	709.8
Total	708.3	710.1
Oil/Gas		
Combined Cycle	461.5	458.3
Turbines	333.0	335.6
Total	341.3	346.9
Average Scrubber Cost		
NSPS	101.8	97.7
ANSPS	107.9	108.8
Retrofit	136.5	136.1
Total	115.5	111.8

(GW) -- Gigawatts.

* Gigawatts figures represent capacity built after 1975 rather than total.

COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL

DRY SCRUBBING

(10^6 tons)

Sector	1990	1995
Electric Utility	922.3	1,162.5
Scrubbed	477.1	741.5
Not Scrubbed	445.2	421.0
Industrial	278.6	320.2
Metallurgical	100.0	104.1
Residential/Commercial	0.7	0.4
Synthetics	56.2	88.8
Export	76.8	80.5
Total	1,434.5	1,756.5

1990 COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	218.0	478.9	225.4	922.3
Scrubbed	-	50.3	305.7	121.0	477.1
Not Scrubbed	-	167.7	173.1	104.4	445.2
Industrial	-	184.6	-	94.0	278.6
Metallurgical	68.7	-	31.3	-	100.0
Residential/Commercial	-	0.3	0.5	-	0.7
Synthetics	-	2.6	33.3	20.5	56.2
Export	60.8	2.8	3.9	9.3	76.8
Total	129.5	408.3	547.6	349.2	1,434.5

1995 COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	257.4	633.6	271.5	1,162.5
Scrubbed	-	93.6	478.9	169.0	741.5
Not Scrubbed	-	163.8	154.6	102.5	421.0
Industrial	-	213.6	2.0	104.6	320.2
Metallurgical	71.5	-	32.6	-	104.1
Residential/Commercial	-	0.1	0.3	-	0.4
Synthetics	-	5.3	36.1	47.4	88.8
Export	63.9	2.9	4.1	9.7	80.5
Total	135.4	479.3	708.7	433.2	1,756.5

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^3 tons)

	1975	1990	1995
New England			
Coal Plants			
Existing	48.4	139.8	108.1
NSPS	-	-	-
ANSPS	-	-	16.3
Oil/Gas Plants	101.8	108.7	51.6
Total	150.2	248.5	176.0
Middle Atlantic			
Coal Plants			
Existing	1,835.9	1,476.8	1,467.3
NSPS	-	97.2	101.1
ANSPS	-	127.5	226.6
Oil/Gas Plants	371.1	322.7	298.9
Total	2,207.6	2,024.1	2,093.9
South Atlantic			
Coal Plants			
Existing	2,632.2	3,124.4	3,074.7
NSPS	-	188.4	198.2
ANSPS	-	421.1	792.9
Oil/Gas Plants	746.1	476.0	281.7
Total	3,378.3	4,209.9	4,347.4
East			
Coal Plants			
Existing	4,516.5	4,741.0	4,650.1
NSPS	-	285.6	299.3
ANSPS	-	548.6	1,035.8
Oil/Gas Plants	1,219.6	907.4	632.2
Total	5,136.1	6,482.6	6,617.4
EAST NORTH CENTRAL			
Coal Plants			
Existing	6,771.8	4,998.4	4,770.8
NSPS	-	330.5	352.8
ANSPS	-	100.5	320.7
Oil/Gas Plants	103.4	120.5	83.7
Total	6,885.2	5,549.9	5,528.0

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^3 tons)

	1975	1990	1995
EAST SOUTH CENTRAL			
Coal Plants			
Existing	3,351.5	2,330.6	2,198.0
NSPS	-	236.4	232.1
ANSPS	-	376.2	603.5
Oil/Gas Plants	43.2	79.9	59.7
Total	3,394.7	2,973.0	3,093.4
WEST NORTH CENTRAL			
Coal Plants			
Existing	1,491.5	1,946.9	1,826.2
NSPS	-	405.4	416.8
ANSPS	-	53.7	163.6
Oil/Gas Plants	41.4	42.4	36.2
Total	1,532.9	2,448.4	2,442.8
WEST SOUTH CENTRAL			
Coal Plants			
Existing	203.7	149.8	149.8
NSPS	-	693.0	693.0
ANSPS	-	313.2	553.8
Oil/Gas Plants	209.0	545.8	305.4
Total	412.7	1,701.7	1,702.0
Mountain			
Coal Plants			
Existing	322.9	355.8	322.2
NSPS	-	176.5	176.3
ANSPS	-	201.3	327.4
Oil/Gas Plants	25.2	24.7	13.0
Total	358.1	758.2	838.9
Pacific			
Coal Plants			
Existing	47.6	77.4	35.6
NSPS	-	17.5	17.5
ANSPS	-	19.6	65.8
Oil/Gas Plants	148.1	100.8	106.8
Total	195.7	215.3	225.7

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^3 tons)

	1975	1990	1995
REST OF WEST			
Coal Plants			
Existing	380.5	433.2	357.8
NSPS	-	194.0	193.8
ANSPS	-	220.9	393.2
Oil/Gas Plants	173.3	125.5	119.8
Total	553.8	973.5	1,064.6
NATIONAL			
Coal Plants			
Existing	16,915.4	14,599.6	13,952.6
NSPS	-	2,144.9	2,187.8
ANSPS	-	1,563.1	3,070.6
Oil/Gas Plants	1,789.9	1,821.4	1,237.0
Total	18,705.3	20,128.9	20,448.0

Source for 1975 data: EPA National Emissions Data System, Computer Printout, May 1, 1978.

ANNUAL NATIONAL NO_x AND PARTICULATE EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^3 tons)

	NO_x		TSP	
	1990	1995	1990	1995
NATIONAL				
Oil/Gas	1,304.7	925.8	158.5	110.0
Coal	7,030.5	8,389.5	794.5	845.8
Existing	3,914.1	3,601.0	516.1	476.9
NSPS	1,365.1	1,394.4	192.2	196.3
ANSPS	1,751.4	3,394.1	86.1	172.6
Total	8,335.2	9,315.3	953.0	955.7

NATIONAL UTILITY FUEL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL DRY SCRUBBING

(quadrillion Btu)

	1975	1990	1995
NATIONAL			
Coal	9.3	19.9	25.0
Existing	9.3	10.3	9.5
NSPS	-	3.8	3.9
ANSPS	-	5.7	11.5
Oil/Gas	6.2	4.2	3.1
Nuclear	1.7	9.7	13.5
Hydro and Other	2.0	3.4	3.4
Total	19.2	37.2	45.0
Percent of Total			
Coal	48.4	53.5	55.6
Oil/Gas	32.3	11.3	6.9
Nuclear	8.9	26.1	30.0
Hydro and Other	10.4	9.1	7.6

UTILITY OIL/GAS CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England	0.425	0.241	0.124
Middle Atlantic	0.824	0.786	0.706
South Atlantic	1.010	0.804	0.493
EAST	2.259	1.831	1.323
EAST NORTH CENTRAL	0.317	0.395	0.286
EAST SOUTH CENTRAL	0.112	0.166	0.142
WEST NORTH CENTRAL	0.289	0.131	0.131
WEST SOUTH CENTRAL	2.162	1.185	0.672
Mountain	0.249	0.097	0.071
Pacific	0.787	0.445	0.474
WEST	1.036	0.542	0.545
TOTAL	6.175	4.249	3.099
Oil for Coal Transportation		0.276	0.355
TOTAL		4.525	3.454

UTILITY COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England			
High Sulfur		0.198	0.053
Medium Sulfur		0.005	0.147
Low Sulfur		-	-
Total	0.047	0.203	0.200
Middle Atlantic			
High Sulfur		0.270	0.343
Medium Sulfur		1.435	1.664
Low Sulfur		0.045	0.052
Total	1.076	1.751	2.059
South Atlantic			
High Sulfur		1.279	1.576
Medium Sulfur		2.481	3.467
Low Sulfur		0.293	0.284
Total	1.789	4.052	5.327
EAST			
High Sulfur		1.747	2.066
Medium Sulfur		3.921	5.183
Low Sulfur		0.338	0.336
Total	2.912	6.006	7.585
EAST NORTH CENTRAL			
High Sulfur		1.411	1.796
Medium Sulfur		2.042	2.111
Low Sulfur		0.767	0.751
Total	2.670	4.219	4.658
EAST SOUTH CENTRAL			
High Sulfur		1.587	2.029
Medium Sulfur		0.840	1.148
Low Sulfur		0.373	0.298
Total	1.328	2.800	3.474
WEST NORTH CENTRAL			
High Sulfur		0.467	0.432
Medium Sulfur		0.784	1.241
Low Sulfur		0.572	0.531
Total	0.783	1.823	2.203

UTILITY COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
WEST SOUTH CENTRAL			
High Sulfur		-	-
Medium Sulfur		1.524	2.189
Low Sulfur		1.073	1.584
Total	0.119	2.597	3.773
Mountain			
High Sulfur		-	-
Medium Sulfur		1.156	1.561
Low Sulfur		1.068	1.140
Total	0.615	2.224	2.701
Pacific			
High Sulfur		-	-
Medium Sulfur		0.107	0.059
Low Sulfur		0.132	0.517
Total	0.069	0.239	0.577
REST OF WEST			
High Sulfur		-	-
Medium Sulfur		1.263	1.620
Low Sulfur		1.200	1.657
Total	0.685	2.463	3.278
NATIONAL			
High Sulfur		5.212	6.321
Medium Sulfur		10.374	13.493
Low Sulfur		4.323	5.157
Total	8.719	19.908	24.972

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Maine/Vt./New Hampshire				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Mass./Conn./Rhode Island				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	1.323	BF	0.044	Ohio
ANSPS (Full)	0.401	BG	0.013	Ohio
ANSPS (No Scrub)	-	--	-	-
Total	1.724		0.058	
Pennsylvania, West				
ANSPS (Part)	5.076	BD	0.161	Southern West Virginia
ANSPS (Full)	0.415	BF	0.024	Northern West Virginia
ANSPS (Full)	1.632	BG	0.094	Northern West Virginia
Total	7.123		0.280	
Pennsylvania, East/N.J./N.Y.DS				
ANSPS (Part)	3.334	BD	0.093	Northern West Virginia
ANSPS (Full)	3.368	BF	0.183	Pennsylvania
ANSPS (No Scrub)	-	--	-	-
Total	6.702		0.276	
New York, Upstate				
ANSPS (Part)	4.816	BD	0.161	Pennsylvania
ANSPS (Full)	1.674	BF	0.091	Pennsylvania
ANSPS (Full)	0.577	BG	0.031	Pennsylvania and Ohio
Total	7.067		0.283	
Virginia/Md./Del.				
ANSPS (Part)	7.769	BD	0.241	Southern West Virginia & Pennsylvania
ANSPS (Full)	1.022	BF	0.056	Pennsylvania
ANSPS (No Scrub)	-	--	-	-
Total	8.791		0.296	
West Virginia				
ANSPS (Part)	0.016	BB	-	Southern West Virginia
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	0.016		-	

1995 ANSPS COAL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL

DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
North & South Carolina				
ANSPS (Part)	12.351	BD	0.402	East Kentucky
ANSPS (Full)	0.140	BG	0.008	West Kentucky
ANSPS (No Scrub)	-	--	-	-
Total	12.491		0.410	
Georgia/North Florida				
ANSPS (Part)	6.959	BD	0.205	Illinois
ANSPS (Part)	14.214	BG	0.823	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	21.174		1.027	
South Florida				
ANSPS (Part)	7.773	BD	0.259	Alabama
ANSPS (Full)	7.359	BF	0.426	Pennsylvania
ANSPS (No Scrub)	3,402	BG	0.197	Northern West Virginia
Total	18.534		0.882	
Ohio, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Ohio, Central				
ANSPS (Part)	2.952	BD	0.099	Illinois
ANSPS (Full)	0.009	BF	0.001	Illinois
ANSPS (No Scrub)	3.739	BG	0.216	Illinois
Total	6.700		0.316	
Ohio, South				
ANSPS (Part)	4.375	BD	0.153	East Kentucky
ANSPS (Full)	0.723	BF	0.042	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	5.098		0.195	
Michigan				
ANSPS (Part)	1.517	BD	0.052	Illinois
ANSPS (No Scrub)	5.037	BG	0.292	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	6.554		0.343	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Illinois				
ANSPS (Part)	1.305	BD	0.041	Illinois & South Colorado
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	1.305		0.041	
Indiana				
ANSPS (Part)	0.622	BD	0.019	Illinois
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	0.622		0.019	
Wisconsin				
ANSPS (Part)	2.830	BD	0.094	Illinois
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	2.830		0.094	
Kentucky, East				
ANSPS (Part)	2.071	BD	0.061	Indiana
ANSPS (Part)	1.630	BG	0.094	Indiana
ANSPS (No Scrub)	-	--	-	-
Total	3.701		0.155	
Kentucky, West				
ANSPS (Part)	7.358	BD	0.210	Indiana
ANSPS (Full)	6.923	BG	0.376	Indiana
ANSPS (No Scrub)	-		-	-
Total	14.281		0.587	
Tennessee, East				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.527	BG	0.018	Indiana
ANSPS (No Scrub)	-	--	-	-
Total	0.527		0.018	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Tennessee, West				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	9.892	BG	0.481	Illinois
ANSPS (Full)	4.299	SF	0.245	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	14.190		0.726	
Alabama/Mississippi				
ANSPS (Part)	1.440	BD	0.050	Alabama
ANSPS (Full)	4.778	BG	0.231	West Kentucky
ANSPS (No Scrub)	-	--	-	-
Total	6.218		0.281	
North & South Dakota/Minnesota				
ANSPS (Part)	0.282	SA	0.009	West Montana
ANSPS (Part)	0.391	SB	0.013	West Montana
ANSPS (Part)	0.023	LA	0.001	North Dakota
ANSPS (Part)	3.437	LD	0.131	North Dakota
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	4.133		0.154	
Kansas/Nebraska				
ANSPS (Part)	3.126	BD	0.094	Wyoming
ANSPS (Part)	1.525	SD	0.084	Wyoming
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	4.652		0.178	
Iowa				
ANSPS (Part)	2.063	BD	0.064	Wyoming
ANSPS (Part)	3.189	SD	0.176	Wyoming
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	5.252		0.240	
Missouri				
ANSPS (Part)	2.939	BD	0.091	Wyoming
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	2.939		0.091	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Arkansas/Oklahoma/Louisiana				
ANSPS (Part)	4.113	BB	0.127	Utah
ANSPS (Part)	4.388	BD	0.136	Wyoming
ANSPS (Part)	9.589	SD	0.529	Wyoming
ANSPS (Full)	-	--	-	-
Total	18.090		0.792	
Texas				
ANSPS (Part)	10.610	BA	0.295	South Colorado
ANSPS (Part)	5.591	BB	0.294	South Colorado
ANSPS (Part)	13.620	BD	0.560	South Colorado
ANSPS (Part)	0.472	SD	0.026	Wyoming
ANSPS (Full)	8.907	LF	0.519	Texas
Total	39.201		1.695	
Idaho				
ANSPS (Part)	0.840	BD	0.029	Wyoming
ANSPS (Part)	5.066	SD	0.284	Wyoming
ANSPS (Full)	0.620	SF	0.038	Wyoming
Total	6.526		0.350	
Montana				
ANSPS (Part)	5.181	SA	0.304	West Montana
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	5.181		0.304	
Wyoming				
ANSPS (Part)	0.013	SA	0.013	West Montana
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	0.013		0.013	
Utah				
ANSPS (Part)	1.338	BB	0.055	Utah
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	1.338		0.055	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Nevada				
ANSPS (Part)	1.197	BB	0.059	Utah
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	1.197		0.059	
Colorado				
ANSPS (Part)	3.324	BD	0.116	New Mexico
ANSPS (Part)	4.002	SD	0.235	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	7.326		0.351	
Arizona				
ANSPS (Part)	5.609	BD	0.284	New Mexico
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	5.609		0.284	
New Mexico				
ANSPS (Part)	2.518	BD	0.136	New Mexico
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	2.518		0.136	
Washington/Oregon				
ANSPS (Part)	0.015	BD	0.001	Wyoming
ANSPS (Part)	8.301	SA	0.488	West Montana
ANSPS (Part)	0.482	SD	0.028	Washington
ANSPS (Full)	-	--	-	-
Total	8.798		0.517	
California, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
California, South				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	

AGGREGATED REGIONAL COAL PRODUCTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia	158.2	224.0	279.2
Central Appalachia	211.1	184.8	191.8
Southern Appalachia	22.9	12.6	12.4
APPALACHIA	392.1	421.3	483.5
MIDWEST	138.6	373.5	449.8
Eastern Northern Great Plains	8.5	27.5	35.6
Western Northern Great Plains	45.2	404.7	566.1
NORTHERN GREAT PLAINS	53.7	432.2	601.7
Central West	9.5	6.0	9.9
Gulf	10.0	71.8	61.8
Rockies	14.0	64.2	94.3
Southwest	15.7	58.3	48.0
Northwest	4.5	5.6	2.9
REST OF WEST	50.0	205.8	216.8
TOTAL	634.6	1,432.8	1,751.8

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia			
Metallurgical	13.5	17.8	25.0
High Sulfur	107.1	76.9	89.6
Medium Sulfur	37.4	129.0	164.0
Low Sulfur	0.2	0.4	0.6
Total	158.1	224.0	279.2
Central Appalachia			
Metallurgical	83.0	126.4	146.4
High Sulfur	23.6	4.2	-
Medium Sulfur	91.9	35.8	25.2
Low Sulfur	12.6	18.4	20.3
Total	211.1	184.8	191.8
Southern Appalachia			
Metallurgical	1.7	4.0	6.1
High Sulfur	-	-	-
Medium Sulfur	21.2	4.4	1.1
Low Sulfur	-	4.2	5.2
Total	22.9	12.6	12.4
APPALACHIA			
Metallurgical	98.2	148.2	177.5
High Sulfur	130.7	81.1	89.6
Medium Sulfur	150.5	169.2	190.3
Low Sulfur	12.8	22.9	26.0
Total	392.1	421.3	483.5
MIDWEST			
Metallurgical	-	-	-
High Sulfur	131.6	264.0	328.5
Medium Sulfur	7.1	108.6	119.8
Low Sulfur	-	1.0	1.4
Total	138.6	373.5	449.8
Eastern Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	0.3	0.3	10.3
Medium Sulfur	7.8	22.9	21.5
Low Sulfur	0.4	4.2	3.8
Total	8.6	27.5	35.6

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Western Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	7.6	110.1	180.1
Low Sulfur	37.6	294.5	386.0
Total	45.2	404.7	566.1
NORTHERN GREAT PLAINS			
Metallurgical	-	-	-
High Sulfur	0.3	0.3	10.3
Medium Sulfur	15.4	133.1	201.6
Low Sulfur	38.0	298.8	389.8
Total	53.8	432.2	610.7
Central West			
Metallurgical	0.3	0.1	0.1
High Sulfur	8.4	4.3	6.0
Medium Sulfur	0.8	0.9	2.9
Low Sulfur	-	0.6	1.0
Total	8.5	6.0	9.9
Gulf			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	10.0	71.8	61.8
Low Sulfur	-	-	-
Total	10.0	71.8	61.8
Rockies			
Metallurgical	2.9	5.5	4.6
High Sulfur	-	-	-
Medium Sulfur	0.8	9.4	18.5
Low Sulfur	10.4	49.4	71.3
Total	14.1	64.2	94.3
Southwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	15.2	16.0	1.7
Low Sulfur	0.5	42.3	46.3
Total	15.7	58.3	48.0

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Northwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	3.7	5.6	2.9
Low Sulfur	0.8	-	-
Total	4.5	5.6	2.9
WEST			
Metallurgical	3.3	5.6	4.7
High Sulfur	8.4	4.3	6.0
Medium Sulfur	30.4	103.7	87.7
Low Sulfur	11.7	92.3	118.5
Total	53.7	205.8	216.8
TOTAL			
Metallurgical	101.7	153.8	182.2
High Sulfur	147.8	349.6	434.4
Medium Sulfur	197.0	514.4	599.4
Low Sulfur	62.5	414.9	535.8
Total	509.0	1,432.8	1,751.8

MINE-MOUTH PRICE
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Northern Appalachia		
High Sulfur	1.09	1.14
Medium Sulfur	1.18	1.22
Low Sulfur	1.55	1.65
Regional Average	1.18	1.24
Central Appalachia		
High Sulfur	1.16	1.23
Medium Sulfur	1.34	1.44
Low Sulfur	1.53	1.66
Regional Average	1.50	1.64
Southern Appalachia		
High Sulfur	--	--
Medium Sulfur	1.33	1.48
Low Sulfur	1.55	1.66
Regional Average	1.49	1.67
Midwest		
High Sulfur	1.03	1.13
Medium Sulfur	1.32	1.41
Low Sulfur	1.58	1.71
Regional Average	1.12	1.21
Eastern Northern Great Plains		
High Sulfur	0.42	0.42
Medium Sulfur	0.43	0.43
Low Sulfur	0.42	0.42
Regional Average	0.43	0.43
Western Northern Great Plains (Bituminous)		
High Sulfur	--	--
Medium Sulfur	1.00	1.06
Low Sulfur	1.03	1.05
Regional Average	1.02	1.06
Western Northern Great Plains (Subbituminous)		
High Sulfur	--	--
Medium Sulfur	0.42	0.40
Low Sulfur	0.51	0.54
Regional Average	0.49	0.50

MINE-MOUTH PRICE
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Central West		
High Sulfur	1.16	1.23
Medium Sulfur	1.27	1.37
Low Sulfur	1.45	1.56
Regional Average	1.22	1.32
Gulf		
High Sulfur	--	--
Medium Sulfur	0.67	1.20
Low Sulfur	--	--
Regional Average	0.67	1.20
Rocky Mountain		
High Sulfur	--	--
Medium Sulfur	1.00	1.16
Low Sulfur	1.02	1.14
Regional Average	1.05	1.17
Southwest		
High Sulfur	--	--
Medium Sulfur	0.79	0.97
Low Sulfur	0.75	0.94
Regional Average	0.76	0.94
Northwest		
High Sulfur	--	--
Medium Sulfur	0.96	1.00
Low Sulfur	--	--
Regional Average	0.96	1.00
National		
High Sulfur	1.05	1.12
Medium Sulfur	1.03	1.08
Low Sulfur	0.73	0.79
Regional Average	1.03	1.09

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

DELIVERED COAL PRICES TO ELECTRIC UTILITIES
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING

($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Northeast		
High Sulfur	1.42	1.49
Medium Sulfur	1.98	1.62
Low Sulfur	--	--
Regional Average	1.43	1.52
Middle Atlantic		
High Sulfur	1.38	1.40
Medium Sulfur	1.55	1.64
Low Sulfur	1.87	1.99
Regional Average	1.53	1.61
South Atlantic		
High Sulfur	1.38	1.46
Medium Sulfur	1.61	1.72
Low Sulfur	1.84	2.24
Regional Average	1.55	1.67
East North Central		
High Sulfur	1.23	1.33
Medium Sulfur	1.53	1.54
Low Sulfur	1.70	1.81
Regional Average	1.39	1.44
East South Central		
High Sulfur	1.24	1.33
Medium Sulfur	1.55	1.61
Low Sulfur	1.68	1.77
Regional Average	1.46	1.53
West North Central		
High Sulfur	1.19	1.28
Medium Sulfur	1.12	1.14
Low Sulfur	1.18	1.24
Regional Average	1.15	1.19
West South Central		
High Sulfur	--	--
Medium Sulfur	1.03	1.40
Low Sulfur	1.44	1.51
Regional Average	1.20	1.45

MINE-MOUTH PRICE
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING

($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Mountain		
High Sulfur	--	--
Medium Sulfur	0.87	0.99
Low Sulfur	0.89	0.96
Regional Average	0.88	0.97
Pacific		
High Sulfur	--	--
Medium Sulfur	1.09	1.13
Low Sulfur	1.07	1.11
Regional Average	1.08	1.11
National Total		
High Sulfur	1.28	1.36
Medium Sulfur	1.37	1.48
Low Sulfur	1.36	1.42
Regional Average	1.34	1.44

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

1990 NATIONAL COAL TRANSPORTATION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR;
70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.6	99.1	79.1	33.7	-	-	-	-	-	223.5
Central Appalachia	-	20.3	94.8	61.9	6.4	0.7	0.8	-	-	184.9
Southern Appalachia	-	-	7.3	-	5.3	-	-	-	-	12.6
Midwest	-	-	55.9	160.9	129.1	27.6	-	-	-	373.5
Central West	-	-	-	-	1.2	3.9	0.7	-	0.2	6.0
Gulf	-	-	-	-	-	-	71.8	-	-	71.8
Eastern Northern Great Plains	-	-	-	-	-	27.3	-	0.2	-	27.5
Western Northern Great Plains	-	-	-	26.9	17.3	59.1	190.9	95.4	15.1	404.7
Rocky Mountains	-	-	-	17.9	-	3.7	16.4	17.5	8.9	64.4
Southwest	-	-	-	-	-	-	16.1	38.5	3.6	58.2
Northwest	-	-	-	-	-	-	-	-	5.6	5.6
Total	11.6	119.4	237.1	301.3	159.3	122.3	296.7	151.6	33.4	1,432.7

1995 NATIONAL COAL TRANSPORTATION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS:
1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR;
70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

Origin	Destination									
	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.8	115.0	100.7	50.9	-	-	-	-	-	278.4
Central Appalachia	-	21.1	99.9	67.6	2.5	0.7	-	-	-	191.8
Southern Appalachia	-	-	6.3	-	6.1	-	-	-	-	12.4
Midwest	-	-	84.8	178.0	162.2	24.4	-	-	-	449.4
Central West	-	-	-	-	1.4	5.3	3.2	-	-	9.9
Gulf	-	-	-	-	-	-	61.8	-	-	61.8
Eastern Northern Great Plains	-	-	-	-	-	35.5	-	0.1	-	35.6
Western Northern Great Plains	-	-	-	24.7	28.8	80.7	252.0	141.6	38.4	566.2
Rocky Mountains	-	-	-	14.8	-	2.2	46.0	17.9	13.3	94.2
Southwest	-	-	-	-	-	-	12.3	35.7	-	48.0
Northwest	-	-	-	-	-	-	-	-	2.9	2.9
Total	11.8	136.1	291.7	336.0	201.0	148.8	375.3	195.3	54.6	1,750.6

1990 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR;
70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	4.61	-	-	-	-	-	-	4.61
South Atlantic	-	9.31	-	-	-	-	-	-	-	9.31
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	1.11	-	-	-	-	-	-	1.11
West North Central	-	-	-	-	-	-	0.11	-	-	0.11
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	2.34	2.34
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	9.31	5.72	-	-	-	0.11	-	2.34	17.48

1995 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	3.70	-	-	-	-	-	-	3.70
South Atlantic	-	5.12	-	-	-	-	-	-	-	5.12
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	-	-	-	-	-	-	-	-
West North Central	-	-	-	0.71	-	-	-	-	-	0.71
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	12.68	12.68
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	5.12	3.70	0.71	-	-	-	-	12.68	22.21

NATIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW (percent capacity factor))

	1975	1990	1995
NATIONAL			
Nuclear	37.2	165.3 (66.9)	230.0 (66.9)
Coal	183.6	401.5 (57.6)	537.2 (54.1)
Existing*	183.6	197.9 (59.3)	197.9 (54.5)
NSPS	-	80.5 (57.0)	80.5 (58.3)
ANSPS	-	123.1 (55.4)	248.8 (52.6)
Oil/Gas	192.1	216.8 (19.1)	200.9 (14.5)
Steam*	147.3	141.0 (24.1)	119.2 (18.8)
Combined Cycle	2.7	6.6 (22.8)	7.5 (20.9)
Turbines	42.2	69.2 (8.7)	74.2 (7.0)
Hydro and Others	68.3	87.8 (44.0)	89.5 (43.5)
Total	481.2	871.4 (48.4)	1,057.6 (48.5)
Percent of Total			
Nuclear	7.7	19.0	21.7
Coal	38.2	46.1	50.8
Oil/Gas	39.9	24.9	19.0
Other	14.2	10.1	8.5

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* Powerplants under ESECA orders to convert from oil and/or gas to coal (14.3 GW) are assumed to convert by 1985.

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
New England		
Nuclear	10.1 (70.0)	14.0 (70.0)
Coal	4.0 (56.2)	5.7 (37.2)
Existing	4.0 (56.2)	4.0 (36.8)
NSPS	-	-
ANSPS	-	1.7 (38.0)
Oil/Gas	8.8 (28.5)	6.1 (20.9)
Steam	7.7 (30.7)	3.9 (27.4)
Combined Cycle	0.4 (30.6)	0.4 (30.6)
Turbines	0.8 (5.0)	1.8 (5.0)
Hydro and Others	2.9 (18.1)	2.9 (18.1)
Total	25.8 (47.8)	28.7 (47.8)
Percent of Total		
Nuclear	39.1	48.8
Coal	15.5	19.9
Oil/Gas	34.1	21.3
Other	11.2	10.1
Middle Atlantic		
Nuclear	26.2 (65.3)	36.4 (65.3)
Coal	34.9 (57.2)	44.1 (53.6)
Existing	20.1 (60.5)	20.1 (57.7)
NSPS	3.1 (65.7)	3.1 (68.6)
ANSPS	11.7 (49.3)	20.9 (47.4)
Oil/Gas	34.8 (22.1)	34.3 (20.1)
Steam	21.1 (31.0)	20.9 (29.2)
Combined Cycle	0.4 (29.2)	0.4 (22.6)
Turbines	13.3 (7.9)	13.0 (5.3)
Hydro and Others	8.0 (46.1)	9.0 (41.4)
Total	103.8 (46.6)	123.9 (46.9)
Percent of Total		
Nuclear	25.2	29.4
Coal	33.6	35.6
Oil/Gas	33.5	27.7
Other	7.7	7.3

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL

DRY SCRUBBING

(GW (percent capacity factor))

	1990	1995
South Atlantic		
Nuclear	32.2 (66.2)	44.7 (66.2)
Coal	83.3 (58.4)	117.2 (54.3)
Existing	47.0 (62.8)	47.0 (61.0)
NSPS	9.2 (40.1)	9.2 (42.7)
ANSPS	27.1 (57.0)	61.0 (51.0)
Oil/Gas	38.4 (20.6)	33.3 (14.1)
Steam	22.3 (27.5)	18.0 (19.2)
Combined Cycle	0.6 (35.9)	0.6 (25.0)
Turbines	15.4 (10.1)	14.7 (7.3)
Hydro and Others	10.4 (23.8)	10.5 (23.7)
Total	164.2 (48.9)	205.7 (48.8)
Percent of Total		
Nuclear	19.6	21.7
Coal	50.7	57.0
Oil/Gas	23.4	16.2
Other	6.3	5.1
East North Central		
Nuclear	33.0 (67.7)	45.9 (67.7)
Coal	86.9 (55.0)	100.5 (52.9)
Existing	62.9 (58.7)	62.9 (53.9)
NSPS	14.5 (46.1)	14.5 (49.7)
ANSPS	9.5 (44.2)	23.1 (52.0)
Oil/Gas	19.7 (18.2)	18.1 (13.8)
Steam	10.7 (25.3)	9.5 (18.2)
Combined Cycle	0.2 (19.1)	0.2 (12.1)
Turbines	8.8 (9.5)	8.3 (8.8)
Hydro and Others	1.7 (16.9)	1.7 (16.9)
Total	141.2 (52.4)	166.1 (52.4)
Percent of Total		
Nuclear	23.4	27.6
Coal	61.5	60.5
Oil/Gas	14.0	10.9
Other	1.2	1.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
East South Central		
Nuclear	23.0 (67.4)	32.0 (67.4)
Coal	60.2 (54.5)	77.5 (52.4)
Existing	30.2 (56.7)	30.2 (50.1)
NSPS	8.4 (57.5)	8.4 (56.4)
ANSPS	21.6 (50.2)	38.9 (53.4)
Oil/Gas	13.7 (10.7)	15.0 (8.0)
Steam	3.0 (18.7)	3.0 (11.2)
Combined Cycle	-	-
Turbines	10.8 (8.5)	12.0 (7.2)
Hydro and Others	6.7 (41.6)	6.8 (40.9)
Total	103.7 (50.7)	131.3 (50.4)
Percent of Total		
Nuclear	22.2	24.4
Coal	58.1	59.0
Oil/Gas	13.2	11.4
Other	6.5	5.2
West North Central		
Nuclear	9.1 (65.0)	12.6 (65.0)
Coal	39.8 (51.4)	49.4 (50.6)
Existing	18.4 (52.3)	18.4 (48.1)
NSPS	14.0 (58.1)	14.0 (60.6)
ANSPS	7.5 (36.7)	17.0 (45.1)
Oil/Gas	13.3 (8.1)	15.3 (7.0)
Steam	4.3 (10.4)	4.3 (6.9)
Combined Cycle	0.1 (8.0)	0.1 (8.0)
Turbines	8.9 (7.0)	11.0 (7.0)
Hydro and Others	4.1 (41.2)	4.1 (41.2)
Total	66.3 (44.0)	81.4 (44.1)
Percent of Total		
Nuclear	13.7	15.5
Coal	60.0	60.7
Oil/Gas	20.1	18.8
Other	6.2	5.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL

DRY SCRUBBING

(GW (percent capacity factor))

	1990	1995
West South Central		
Nuclear	13.1 (65.0)	18.2 (65.0)
Coal	47.1 (64.8)	80.5 (55.0)
Existing	2.2 (64.8)	2.2 (64.8)
NSPS	20.9 (65.0)	20.9 (65.0)
ANSPS	24.0 (64.7)	57.3 (50.9)
Oil/Gas	59.3 (19.7)	47.6 (12.5)
Steam	55.7 (20.4)	44.0 (12.9)
Combined Cycle	1.4 (12.9)	1.4 (10.4)
Turbines	2.2 (6.0)	2.2 (6.0)
Hydro and Others	2.5 (19.5)	2.5 (19.5)
Total	122.0 (42.0)	148.7 (42.0)
Percent of Total		
Nuclear	10.7	12.2
Coal	38.6	54.1
Oil/Gas	48.6	32.0
Other	2.0	1.7
Mountain		
Nuclear	4.3 (65.4)	5.9 (65.4)
Coal	41.3 (63.1)	51.9 (61.2)
Existing	11.8 (62.1)	11.8 (55.4)
NSPS	10.0 (66.0)	10.0 (65.9)
ANSPS	19.5 (62.2)	30.1 (61.9)
Oil/Gas	6.8 (13.1)	6.6 (9.2)
Steam	2.6 (17.5)	1.6 (6.8)
Combined Cycle	0.5 (17.3)	0.5 (13.7)
Turbines	3.6 (9.3)	4.4 (9.5)
Hydro and Others	9.2 (45.9)	9.6 (45.5)
Total	61.5 (55.2)	74.0 (54.8)
Percent of Total		
Nuclear	7.0	8.0
Coal	67.2	70.1
Oil/Gas	11.1	8.9
Other	15.0	13.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
Pacific		
Nuclear	14.4 (70.0)	20.1 (70.0)
Coal	4.0 (69.6)	10.6 (64.5)
Existing	1.3 (68.9)	1.3 (25.0)
NSPS	0.5 (70.0)	0.5 (70.0)
ANSPS	2.2 (70.0)	8.8 (70.0)
Oil/Gas	22.0 (20.9)	24.7 (20.3)
Steam	13.6 (25.2)	13.9 (26.1)
Combined Cycle	3.0 (24.3)	3.9 (24.6)
Turbines	5.4 (9.2)	6.9 (6.0)
Hydro and Others	42.4 (53.1)	42.4 (53.1)
Total	82.8 (48.4)	97.8 (49.5)
Percent of Total		
Nuclear	17.4	20.6
Coal	4.8	10.8
Oil/Gas	26.6	25.3
Other	51.2	43.4
National		
Nuclear	165.3 (66.9)	230.0 (66.9)
Coal	410.5 (57.6)	537.2 (54.1)
Existing*	197.9 (59.3)	197.9 (54.5)
NSPS	80.5 (57.0)	80.5 (58.3)
ANSPS	123.1 (55.4)	258.8 (52.6)
Oil/Gas	216.8 (19.1)	200.9 (14.5)
Steam*	141.0 (24.1)	119.2 (18.8)
Combined Cycle	6.6 (22.8)	7.5 (20.9)
Turbines	69.2 (8.7)	74.2 (7.0)
Hydro and Others	87.8 (44.0)	89.5 (43.5)
Total	871.4 (48.4)	1,057.6 (48.5)
Percent of Total		
Nuclear	19.0	21.7
Coal	46.1	50.8
Oil/Gas	24.9	19.0
Other	10.1	8.5

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
New England				
Capacity Full Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	1.724	(90.0)
Capacity Partially Scrubbed				
Existing	3.315	(79.9)	3.315	(79.9)
NSPS	-	-	-	-
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	3.315	(79.9)	3.315	(79.9)
NSPS	-	-	-	-
ANSPS	-	-	1.724	(90.0)
Middle Atlantic				
Capacity Fully Scrubbed				
Existing	1.900	(90.0)	1.900	(90.0)
NSPS	-	-	-	-
ANSPS	5.242	(90.0)	7.665	(90.0)
Capacity Partially Scrubbed				
Existing	6.322	(43.2)	6.319	(34.7)
NSPS	2.674	(64.1)	2.674	(64.1)
ANSPS	6.419	(69.8)	13.226	(69.8)
Total Capacity Scrubbed				
Existing	8.222	(54.0)	8.219	(47.5)
NSPS	2.674	(64.1)	2.674	(64.1)
ANSPS	11.661	(76.7)	20.891	(75.4)
South Atlantic				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	16.535	(90.0)	26.138	(90.0)
Capacity Partially Scrubbed				
Existing	23.035	(51.4)	21.821	(52.1)
NSPS	1.931	(71.7)	3.198	(65.8)
ANSPS	10.594	(69.8)	34.868	(69.8)
Total Capacity Scrubbed				
Existing	23.035	(51.4)	21.821	(52.1)
NSPS	1.931	(71.7)	3.198	(65.8)
ANSPS	27.129	(58.9)	61.006	(76.2)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
East				
Capacity Fully Scrubbed				
Existing	1.900	(90.0)	1.900	(90.0)
NSPS	-	-	-	-
ANSPS	21.777	(90.0)	35.527	(90.0)
Capacity Partially Scrubbed				
Existing	32.672	(52.7)	31.455	(51.5)
NSPS	4.605	(67.3)	5.872	(65.0)
ANSPS	17.013	(69.8)	49.094	(69.8)
Total Capacity Scrubbed				
Existing	34.572	(54.8)	33.355	(53.7)
NSPS	4.605	(67.3)	5.872	(65.0)
ANSPS	38.790	(81.1)	83.621	(78.4)
East North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	1.466	(90.0)	9.507	(90.0)
Capacity Partially Scrubbed				
Existing	7.528	(74.3)	7.528	(74.3)
NSPS	4.519	(45.4)	4.462	(46.7)
ANSPS	8.030	(69.8)	13.601	(69.8)
Total Capacity Scrubbed				
Existing	7.528	(74.3)	7.528	(74.3)
NSPS	4.519	(45.4)	4.462	(46.7)
ANSPS	9.496	(72.2)	23.108	(76.6)
East South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	14.427	(90.0)	28.048	(90.0)
Capacity Partially Scrubbed				
Existing	4.865	(75.8)	4.865	(75.8)
NSPS	4.072	(52.0)	4.477	(54.5)
ANSPS	7.190	(69.8)	10.869	(69.8)
Total Capacity Scrubbed				
Existing	4.865	(75.8)	4.865	(75.8)
NSPS	4.072	(52.0)	4.477	(54.5)
ANSPS	21.617	(79.7)	38.917	(80.6)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
West North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	7.474	(69.9)	16.977	(69.8)
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	7.474	(69.9)	16.977	(69.8)
West South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	8.908	(90.0)	8.906	(90.0)
Capacity Partially Scrubbed				
Existing	1.110	(64.1)	1.108	(64.1)
NSPS	5.095	(64.1)	5.094	(64.1)
ANSPS	15.047	(69.8)	48.384	(69.9)
Total Capacity Scrubbed				
Existing	1.110	(64.1)	1.108	(64.1)
NSPS	5.095	(64.1)	5.094	(64.1)
ANSPS	23.955	(75.5)	57.290	(78.3)
Mountain				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	0.137	(90.0)	2.936	(90.0)
Capacity Partially Scrubbed				
Existing	1.993	(27.7)	1.978	(27.8)
NSPS	9.314	(55.0)	8.986	(55.2)
ANSPS	19.386	(71.3)	27.115	(69.3)
Total Capacity Scrubbed				
Existing	1.993	(27.7)	1.978	(27.8)
NSPS	9.314	(55.0)	8.986	(55.2)
ANSPS	19.523	(71.4)	30.051	(71.1)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
Pacific				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	2.243	(69.9)	8.798	(70.0)
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	2.243	(69.9)	8.798	(70.0)
Rest of West				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	0.137	(90.0)	8.906	(90.0)
Capacity Partially Scrubbed				
Existing	1.993	(27.7)	1.108	(64.1)
NSPS	9.314	(55.0)	5.094	(64.1)
ANSPS	21.629	(71.2)	51.182	(69.9)
Total Capacity Scrubbed				
Existing	1.993	(27.7)	1.108	(64.1)
NSPS	9.314	(55.0)	5.094	(64.1)
ANSPS	21.766	(71.3)	60.088	(72.9)
National				
Capacity Fully Scrubbed				
Existing	1.900	(90.0)	1.900	(90.0)
NSPS	-	-	-	-
ANSPS	46.715	(90.0)	84.926	(90.0)
Capacity Partially Scrubbed				
Existing	48.168	(57.7)	46.935	(58.2)
NSPS	32.605	(52.3)	33.892	(53.0)
ANSPS	76.383	(70.2)	173.836	(69.8)
Total Capacity Scrubbed				
Existing	50.068	(58.9)	48.835	(59.4)
NSPS	32.605	(52.3)	33.892	(53.0)
ANSPS	123.098	(75.8)	258.762	(74.8)

SLUDGE GENERATED
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^3 tons)

	1990	1995
New England	897.1	810.2
Middle Atlantic	3,067.1	3,803.3
South Atlantic	7,929.0	11,539.8
EAST	11,893.2	16,153.3
EAST NORTH CENTRAL	3,424.3	5,919.9
EAST SOUTH CENTRAL	5,848.4	9,331.1
WEST NORTH CENTRAL	526.4	1,169.8
WEST SOUTH CENTRAL	3,858.8	5,249.0
Mountain	1,916.6	2,676.5
Pacific	114.3	383.6
WEST	2,030.9	3,060.1
TOTAL	27,581.9	40,883.0

UTILITY CAPITAL COSTS*
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^9 $'s)
(using 1978 dollars)

	1990	1995
National		
New Generation Capacity	298.9	467.1
Nuclear (GW)	140.2 (128.2)	211.3 (192.8)
Coal (GW)	143.3 (203.6)	238.7 (339.3)
NSPS	57.4 (80.5)	57.4 (80.5)
ANSPS	85.9 (123.1)	181.3 (258.8)
Oil/Gas	15.4 (44.7)	17.1 (49.4)
Combined Cycle (GW)	1.8 (3.9)	2.2 (4.8)
Turbine (GW)	13.6 (40.9)	14.9 (44.5)
Long Distance Transmission	6.6	6.8
Local Transmission and Distribution	179.2	269.8
Scrubbers (GW)	15.8 (200.1)	25.5 (335.8)
NSPS	1.8 (32.6)	1.8 (33.9)
ANSPS	10.2 (123.1)	19.9 (258.8)
Retrofit	3.8 (44.4)	3.8 (43.1)
Conversion to Western Coal	0.2	0.2
Total	500.7	769.4
Average Plant Cost		
Nuclear	1,093.6	1,096.0
Coal		
NSPS	713.0	713.0
ANSPS	697.8	700.7
Total	703.8	703.5
Oil/Gas		
Combined Cycle	461.5	458.0
Turbines	332.5	334.0
Total	344.5	346.2
Average Scrubber Cost		
NSPS	55.2	53.9
ANSPS	82.9	76.9
Retrofit	85.6	88.2
Total	79.0	75.9

(GW) -- Gigawatts.

* Gigawatts figures represent capacity built after 1975 rather than total.

CHANGE IN INCREMENTAL ANNUALIZED COST OF ELECTRICITY* UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU FLOOR; 0.5 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM REMOVAL
DRY SCRUBBING
(Percentage Change in Rates from Current Standard)
(10^6 $'s)
(1978 $'s)

	1990		1995	
New England	4.2	(0.08)	26.4	(0.45)
Middle Atlantic	31.5	(0.72)	136.3	(1.09)
South Atlantic	502.1	(1.28)	755.4	(2.02)
EAST	537.8		918.1	
EAST NORTH CENTRAL	386.1	(0.92)	679.6	(1.38)
EAST SOUTH CENTRAL	71.8	(1.02)	383.0	(1.92)
WEST NORTH CENTRAL	(76.5)	(1.11)	(111.2)	(1.80)
WEST SOUTH CENTRAL	360.5	(2.04)	849.6	(3.42)
Mountain	276.6	(3.63)	331.0	(3.33)
Pacific	93.7	(0.70)	201.1	(1.27)
WEST	370.3		532.1	
Total Annualized Cost	1,649.9	(1.21)	3,251.6	(1.87)
Present Value of Change in Annualized Cost	18,792.5		33,152.0	
Objective Function	1,379.0		3,018.5	
Present Value of Change in Objective Function	15,791.7		30,488.5	

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* Individual regional estimates can be distorted by changes in transmission between regions, causing anomalies such that costs or emissions decrease in one region while they increase in all others.

CHANGE IN SO_2 EMISSIONS RELATIVE TO CURRENT* STANDARD UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU FLOOR; 0.5 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM REMOVAL
DRY SCRUBBING
(10^3 tons)

	1990	1995
New England	-	20.7
Middle Atlantic	207.6	305.1
South Atlantic	312.7	729.1
EAST	520.3	1,054.9
EAST NORTH CENTRAL	66.9	185.9
EAST SOUTH CENTRAL	220.0	423.1
WEST NORTH CENTRAL	(36.6)	155.4
WEST SOUTH CENTRAL	462.8	918.7
Mountain	268.7	392.7
Pacific	55.0	237.0
WEST	323.7	629.7
TOTAL	1,557.3	3,367.7

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* Individual regional estimates can be distorted by changes in transmission between regions, causing anomalies such that costs or emissions decrease in one region while they increase in all others.

CHANGE IN ANNUALIZED COSTS PER TON REMOVED UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU FLOOR; 0.5 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM REMOVAL

DRY SCRUBBING
($/ton)

	1990	1995
EAST	1,033.6	870.3
CENTRAL	1,040.4	1,070.0
WEST	1,144.0	845.0
TOTAL	1,059.5	965.5

Change in costs between current NSPS (i.e., 1.2 pounds) and ANSPS divided by change in emissions.

COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

(10^6 tons)

Sector	1990	1995
Electric Utility	932.6	1,176.1
Scrubbed	438.8	704.7
Not Scrubbed	493.7	471.4
Industrial	276.8	321.1
Metallurgical	99.9	104.1
Residential/Commercial	0.7	0.4
Synthetics	56.6	88.7
Export	76.9	80.5
Total	1,443.6	1,771.0

1990 COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING (10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	203.4	475.5	253.7	932.6
Scrubbed	-	34.3	253.9	150.7	438.8
Not Scrubbed	-	169.1	221.6	103.0	493.7
Industrial	-	182.6	1.8	92.4	276.8
Metallurgical	68.7	-	31.3	-	99.9
Residential/Commercial	-	0.2	0.5	-	0.7
Synthetics	-	2.6	27.7	26.3	56.6
Export	60.9	2.8	3.9	9.3	76.9
Total	129.6	391.7	540.6	381.7	1,443.6

1995 COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL

WET SCRUBBING

(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	245.9	629.1	301.1	1,176.1
Scrubbed	-	82.0	422.8	199.9	704.7
Not Scrubbed	-	164.0	206.2	101.2	471.4
Industrial	-	214.1	-	107.1	321.2
Metallurgical	71.5	-	32.6	-	104.1
Residential/Commercial	-	0.1	0.3	-	0.4
Synthetics	-	5.3	38.4	45.1	88.7
Export	63.9	2.9	4.1	9.7	80.5
Total	135.4	468.3	704.4	463.0	1,771.0

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^3 tons)

	1975	1990	1995
New England			
Coal Plants			
Existing	48.4	139.8	108.1
NSPS	-	-	-
ANSPS	-	-	16.6
Oil/Gas Plants	101.8	108.7	51.6
Total	150.2	248.5	176.2
Middle Atlantic			
Coal Plants			
Existing	1,835.9	1,471.1	1,464.1
NSPS	-	104.8	102.1
ANSPS	-	142.6	252.9
Oil/Gas Plants	371.1	325.0	300.2
Total	2,207.6	2,043.6	2,119.2
South Atlantic			
Coal Plants			
Existing	2,632.2	3,121.0	3,026.4
NSPS	-	156.3	169.6
ANSPS	-	434.2	865.3
Oil/Gas Plants	746.1	497.7	303.6
Total	3,378.3	4,209.2	4,364.9
East			
Coal Plants			
Existing	4,516.5	4,731.9	4,598.6
NSPS	-	261.1	271.7
ANSPS	-	576.8	1,134.8
Oil/Gas Plants	1,219.6	931.4	655.4
Total	5,136.1	6,501.3	6,660.3
EAST NORTH CENTRAL			
Coal Plants			
Existing	6,771.8	5,011.1	4,859.8
NSPS	-	324.7	334.9
ANSPS	-	134.0	347.0
Oil/Gas Plants	103.4	123.7	85.5
Total	6,885.2	5,593.4	5,627.2

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL

WET SCRUBBING

(10^3 tons)

	1975	1990	1995
EAST SOUTH CENTRAL			
Coal Plants			
Existing	3,351.5	2,332.2	2,213.9
NSPS	-	203.9	202.3
ANSPS	-	401.8	644.2
Oil/Gas Plants	43.2	83.1	64.4
Total	3,394.7	3,021.0	3,124.8
WEST NORTH CENTRAL			
Coal Plants			
Existing	1,491.5	1,799.9	1,687.3
NSPS	-	400.4	385.8
ANSPS	-	80.7	199.0
Oil/Gas Plants	41.4	47.7	36.2
Total	1,532.9	2,328.7	2,308.3
WEST SOUTH CENTRAL			
Coal Plants			
Existing	203.7	150.0	150.0
NSPS	-	696.4	696.4
ANSPS	-	324.6	590.1
Oil/Gas Plants	209.0	545.7	309.1
Total	412.7	1,716.6	1,745.6
Mountain			
Coal Plants			
Existing	322.9	362.5	338.2
NSPS	-	171.7	168.4
ANSPS	-	205.6	331.0
Oil/Gas Plants	25.2	26.1	24.2
Total	358.1	766.0	861.8
Pacific			
Coal Plants			
Existing	47.6	78.0	35.7
NSPS	-	17.5	17.5
ANSPS	-	19.1	66.8
Oil/Gas Plants	148.1	103.0	106.8
Total	195.7	217.7	226.8

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

(10^3 tons)

	1975	1990	1995
REST OF WEST			
Coal Plants			
Existing	380.5	440.5	373.9
NSPS	-	189.2	185.9
ANSPS	-	224.7	397.8
Oil/Gas Plants	173.3	129.1	131.0
Total	553.8	983.7	1,088.6
NATIONAL			
Coal Plants			
Existing	16,915.4	14,465.5	13,883.3
NSPS	-	2,075.8	2,077.1
ANSPS	-	1,742.6	3,312.7
Oil/Gas Plants	1,789.9	1,860.7	1,281.6
Total	18,705.3	20,144.6	20,554.7

Source for 1975 data: EPA National Emissions Data System, Computer Printout, May 1, 1978.

NATIONAL UTILITY FUEL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
NATIONAL			
Coal	9.3	19.9	25.1
Existing	9.3	10.2	9.5
NSPS	-	3.7	3.7
ANSPS	-	6.0	11.8
Oil/Gas	6.2	4.4	3.2
Nuclear	1.7	9.7	13.5
Hydro and Other	2.0	3.4	3.4
Total	19.2	37.4	45.2
Percent of Total			
Coal	48.4	53.2	55.5
Oil/Gas	32.3	11.8	7.1
Nuclear	8.9	25.9	29.9
Hydro and Other	10.4	9.1	7.5

UTILITY OIL/GAS CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England	0.425	0.241	0.124
Middle Atlantic	0.824	0.804	0.712
South Atlantic	1.010	0.837	0.527
EAST	2.259	1.882	1.363
EAST NORTH CENTRAL	0.317	0.412	0.293
EAST SOUTH CENTRAL	0.112	0.190	0.162
WEST NORTH CENTRAL	0.289	0.145	0.131
WEST SOUTH CENTRAL	2.162	1.185	0.681
Mountain	0.249	0.103	0.101
Pacific	0.787	0.459	0.474
WEST	1.036	0.562	0.575
TOTAL	6.175	4.376	3.206
Oil for Coal Transportation		0.277	0.356
TOTAL		4.653	3.562

UTILITY COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England			
High Sulfur		0.198	0.051
Medium Sulfur		0.005	0.148
Low Sulfur		-	-
Total	0.047	0.203	0.200
Middle Atlantic			
High Sulfur		0.119	0.267
Medium Sulfur		1.661	1.845
Low Sulfur		0.015	0.010
Total	1.076	1.795	2.122
South Atlantic			
High Sulfur		1.486	1.915
Medium Sulfur		2.271	3.159
Low Sulfur		0.185	0.203
Total	1.789	3.942	5.277
EAST			
High Sulfur		1.803	2.330
Medium Sulfur		3.937	5.056
Low Sulfur		0.200	0.214
Total	2.912	5.940	7.599
EAST NORTH CENTRAL			
High Sulfur		1.662	2.100
Medium Sulfur		1.686	1.733
Low Sulfur		0.870	0.842
Total	2.670	4.217	4.675
EAST SOUTH CENTRAL			
High Sulfur		1.922	2.142
Medium Sulfur		0.612	1.044
Low Sulfur		0.298	0.280
Total	1.328	2.833	3.467
WEST NORTH CENTRAL			
High Sulfur		0.451	0.451
Medium Sulfur		0.855	1.267
Low Sulfur		0.557	0.514
Total	0.783	1.863	2.231

UTILITY COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
WEST SOUTH CENTRAL			
High Sulfur		0.014	0.003
Medium Sulfur		1.693	2.469
Low Sulfur		0.881	1.351
Total	0.119	2.587	3.823
Mountain			
High Sulfur		-	-
Medium Sulfur		1.194	1.599
Low Sulfur		1.044	1.123
Total	0.615	2.237	2.722
Pacific			
High Sulfur		-	-
Medium Sulfur		0.107	0.059
Low Sulfur		0.129	0.526
Total	0.069	0.236	0.585
REST OF WEST			
High Sulfur		-	-
Medium Sulfur		1.301	1.658
Low Sulfur		1.173	1.649
Total	0.685	2.474	3.307
NATIONAL			
High Sulfur		5.851	7.025
Medium Sulfur		10.083	13.228
Low Sulfur		3.979	4.850
Total	8.719	19.913	25.103

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Maine/Vt./New Hampshire				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Mass./Conn./Rhode Island				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	1.270	BF	0.043	Ohio
ANSPS (Full)	0.455	BG	0.015	Ohio
ANSPS (No Scrub)	-	--	-	-
Total	1.724		0.058	
Pennsylvania, West				
ANSPS (Full)	4.445	BF	0.146	Northern West Virginia
ANSPS (Full)	3.313	BG	0.192	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	7.757		0.338	
Pennsylvania, East/N.J./N.Y.DS				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	6.718	BF	0.279	Pennsylvania
ANSPS (No Scrub)	-	--	-	-
Total	6.718		0.279	
New York, Upstate				
ANSPS (Full)	7.061	BF	0.290	Pennsylvania
ANSPS (Full)	0.011	BG	0.001	Pennsylvania and Ohio
ANSPS (No Scrub)	-	--	-	-
Total	7.073		0.290	
Virginia/Md./Del.				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	7.769	BF	0.335	Pennsylvania
ANSPS (No Scrub)	-	--	-	-
Total	7.769		0.335	
West Virginia				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
North & South Carolina				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	12.441	BG	0.420	West Kentucky
ANSPS (No Scrub)	-	--	-	-
Total	12.441		0.420	
Georgia/North Florida				
ANSPS (Full)	6.831	BF	0.207	Illinois
ANSPS (Full)	12.233	BG	0.705	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	19.064		0.912	
South Florida				
ANSPS (Full)	15.053	BF	0.689	Pennsylvania
ANSPS (Full)	5.572	BG	0.323	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	20.625		1.012	
Ohio, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Ohio, Central				
ANSPS (Full)	0.063	BF	0.002	Illinois
ANSPS (Full)	7.174	BG	0.360	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	7.236		0.362	
Ohio, South				
ANSPS (Full)	4.375	BF	0.158	Northern West Virginia
ANSPS (Full)	0.723	BG	0.042	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	5.098		0.200	
Michigan				
ANSPS (Part)	-	--	-	-
ANSPS (No Scrub)	6.554	BG	0.263	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	6.554		0.263	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Illinois				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	1.082	BG	0.036	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	1.082		0.036	
Indiana				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Wisconsin				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	2.830	BG	0.097	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	2.830		0.097	
Kentucky, East				
ANSPS (Part)	1.682	BD	0.050	Indiana
ANSPS (Full)	1.978	BG	0.115	Indiana
ANSPS (No Scrub)	-	--	-	-
Total	3.660		0.165	
Kentucky, West				
ANSPS (Part)	3.661	BD	0.106	Indiana
ANSPS (Full)	9.741	BG	0.529	Indiana
ANSPS (No Scrub)	-		-	-
Total	13.402		0.636	
Tennessee, East				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.527	BG	0.018	Indiana
ANSPS (No Scrub)	-	--	-	-
Total	0.527		0.018	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Tennessee, West				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	9.537	BG	0.462	Illinois
ANSPS (Full)	4.654	SF	0.265	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	14.190		0.727	
Alabama/Mississippi				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	6.218	BG	0.276	West Kentucky
ANSPS (No Scrub)	-	--	-	-
Total	6.218		0.276	
North & South Dakota/Minnesota				
ANSPS (Part)	0.518	SA	0.021	West Montana
ANSPS (Part)	0.292	LA	0.012	North Dakota
ANSPS (Part)	3.206	LD	0.110	North Dakota
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	3.983		0.143	
Kansas/Nebraska				
ANSPS (Part)	0.959	BD	0.029	South Colorado
ANSPS (Full)	3.615	SF	0.199	Wyoming
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	4.574		0.228	
Iowa				
ANSPS (Part)	0.220	BD	0.007	Wyoming
ANSPS (Full)	5.175	SF	0.280	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	5.396		0.288	
Missouri				
ANSPS (Full)	1.637	BG	0.052	Illinois
ANSPS (Full)	1.302	SF	0.074	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	2.939		0.126	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Arkansas/Oklahoma/Louisiana				
ANSPS (Part)	2.049	BB	0.065	Utah
ANSPS (Part)	5.837	BD	0.184	Wyoming
ANSPS (Full)	0.213	BF	0.007	Oklahoma
ANSPS (Full)	0.088	BG	0.003	Kansas & Oklahoma
ANSPS (Full)	9.589	SF	0.546	Wyoming
Total	17.776		0.804	
Texas				
ANSPS (Part)	5.388	BA	0.152	South Colorado
ANSPS (Part)	9.461	BB	0.267	South Colorado
ANSPS (Part)	11.456	BD	0.561	South Colorado
ANSPS (Full)	4.104	SF	0.234	Wyoming
ANSPS (Full)	8.807	LF	0.513	Texas
Total	39.216		1.727	
Idaho				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	6.780	SF	0.377	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	6.780		0.377	
Montana				
ANSPS (Part)	5.181	SA	0.309	West Montana
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	5.181		0.309	
Wyoming				
ANSPS (Part)	0.329	SA	0.012	West Montana & Wyoming
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	0.329		0.012	
Utah				
ANSPS (Part)	1.169	BB	0.047	Utah
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	1.169		0.047	

1995 ANSPS COAL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Nevada				
ANSPS (Part)	2.088	BB	0.116	Utah
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	2.088		0.116	
Colorado				
ANSPS (Part)	1.235	BD	0.043	New Mexico
ANSPS (Full)	6.247	SF	0.373	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	7.482		0.415	
Arizona				
ANSPS (Part)	3.518	BD	0.183	New Mexico
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	3.518		0.183	
New Mexico				
ANSPS (Part)	2.195	BD	0.119	New Mexico
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	2.195		0.119	
Washington/Oregon				
ANSPS (Part)	0.005	BD	0.000	Wyoming
ANSPS (Part)	8.317	SA	0.497	West Montana
ANSPS (Part)	0.475	SD	0.028	Washington
ANSPS (No Scrub)	-	--	-	-
Total	8.798		0.525	
California, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
California, South				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	

AGGREGATED REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia	158.2	212.7	291.0
Central Appalachia	211.1	180.1	168.6
Southern Appalachia	22.9	12.3	10.7
APPALACHIA	392.1	405.1	470.3
MIDWEST	138.6	390.1	465.2
Eastern Northern Great Plains	8.5	24.8	34.9
Western Northern Great Plains	45.2	430.4	597.0
NORTHERN GREAT PLAINS	53.7	455.2	631.9
Central West	9.5	5.4	10.2
Gulf	10.0	71.8	61.8
Rockies	14.0	57.5	82.1
Southwest	15.7	51.4	45.9
Northwest	4.5	5.6	2.9
REST OF WEST	50.0	191.6	202.8
TOTAL	634.6	1,442.0	1,770.2

REGIONAL COAL PRODUCTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL

WET SCRUBBING

(10^6 tons)

	1975	1990	1995
Northern Appalachia			
Metallurgical	13.5	17.4	19.7
High Sulfur	107.1	74.5	95.4
Medium Sulfur	37.4	120.5	175.6
Low Sulfur	0.2	0.4	0.4
Total	158.1	212.7	291.0
Central Appalachia			
Metallurgical	83.0	125.4	127.5
High Sulfur	23.6	4.2	0.1
Medium Sulfur	91.9	33.4	23.4
Low Sulfur	12.6	17.1	17.6
Total	211.1	180.1	168.6
Southern Appalachia			
Metallurgical	1.7	3.9	5.4
High Sulfur	-	-	-
Medium Sulfur	21.2	4.3	0.6
Low Sulfur	-	4.2	4.7
Total	22.9	12.3	10.7
APPALACHIA			
Metallurgical	98.2	146.7	152.6
High Sulfur	130.7	78.7	95.5
Medium Sulfur	150.5	158.1	199.5
Low Sulfur	12.8	21.6	22.7
Total	392.1	405.1	470.3
MIDWEST			
Metallurgical	-	-	-
High Sulfur	131.6	293.0	350.6
Medium Sulfur	7.1	96.3	113.6
Low Sulfur	-	0.8	1.0
Total	138.6	390.1	465.2
Eastern Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	0.3	6.6	10.3
Medium Sulfur	7.8	13.9	20.8
Low Sulfur	0.4	4.2	3.8
Total	8.6	24.8	34.9

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	1975	1990	1995
Western Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	7.6	149.0	262.5
Low Sulfur	37.6	280.8	334.5
Total	45.2	430.4	597.0
NORTHERN GREAT PLAINS			
Metallurgical	-	-	-
High Sulfur	0.3	6.5	10.3
Medium Sulfur	15.4	163.5	283.4
Low Sulfur	38.0	285.1	338.3
Total	53.8	455.2	631.9
Central West			
Metallurgical	0.3	0.1	0.1
High Sulfur	8.4	3.9	6.8
Medium Sulfur	0.8	0.9	2.7
Low Sulfur	-	0.5	0.6
Total	8.5	5.4	10.2
Gulf			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	10.0	71.8	61.8
Low Sulfur	-	-	-
Total	10.0	71.8	61.8
Rockies			
Metallurgical	2.9	5.5	4.6
High Sulfur	-	-	-
Medium Sulfur	0.8	7.6	14.4
Low Sulfur	10.4	44.4	63.1
Total	14.1	57.5	82.1
Southwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	15.2	16.0	1.7
Low Sulfur	0.5	35.4	44.2
Total	15.7	51.4	45.9

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	1975	1990	1995
Northwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	3.7	5.6	2.9
Low Sulfur	0.8	-	-
Total	4.5	5.6	2.9
WEST			
Metallurgical	3.3	5.6	4.6
High Sulfur	8.4	3.9	6.8
Medium Sulfur	30.4	101.8	83.5
Low Sulfur	11.7	80.3	108.0
Total	53.7	191.6	202.8
TOTAL			
Metallurgical	101.7	152.3	157.2
High Sulfur	147.8	382.2	463.1
Medium Sulfur	197.0	519.8	680.0
Low Sulfur	62.5	387.8	469.9
Total	509.0	1,442.0	1,770.2

MINE-MOUTH PRICE UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Northern Appalachia		
High Sulfur	1.09	1.15
Medium Sulfur	1.17	1.22
Low Sulfur	1.55	1.60
Regional Average	1.18	1.23
Central Appalachia		
High Sulfur	1.15	1.25
Medium Sulfur	1.31	1.37
Low Sulfur	1.52	1.58
Regional Average	1.50	1.57
Southern Appalachia		
High Sulfur	--	--
Medium Sulfur	1.30	1.44
Low Sulfur	1.54	1.61
Regional Average	1.48	1.63
Midwest		
High Sulfur	1.05	1.16
Medium Sulfur	1.24	1.33
Low Sulfur	1.57	1.63
Regional Average	1.10	1.20
Eastern Northern Great Plains		
High Sulfur	0.42	0.42
Medium Sulfur	0.43	0.43
Low Sulfur	0.42	0.44
Regional Average	0.43	0.43
Western Northern Great Plains (Bituminous)		
High Sulfur	--	--
Medium Sulfur	0.93	1.03
Low Sulfur	0.99	1.08
Regional Average	0.97	1.06
Western Northern Great Plains (Subbituminous)		
High Sulfur	--	--
Medium Sulfur	0.40	0.41
Low Sulfur	0.51	0.54
Regional Average	0.48	0.48

MINE-MOUTH PRICE
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Central West		
High Sulfur	1.14	1.23
Medium Sulfur	1.27	1.36
Low Sulfur	1.41	1.49
Regional Average	1.20	1.29
Gulf		
High Sulfur	--	--
Medium Sulfur	0.78	1.14
Low Sulfur	--	--
Regional Average	0.78	1.14
Rocky Mountain		
High Sulfur	--	--
Medium Sulfur	0.96	1.10
Low Sulfur	1.00	1.10
Regional Average	1.04	1.13
Southwest		
High Sulfur	--	--
Medium Sulfur	0.73	0.90
Low Sulfur	0.72	0.87
Regional Average	0.72	0.87
Northwest		
High Sulfur	--	--
Medium Sulfur	0.94	0.98
Low Sulfur	--	--
Regional Average	0.94	0.98
National		
High Sulfur	1.06	1.15
Medium Sulfur	0.96	0.98
Low Sulfur	0.72	0.77
Regional Average	1.01	1.05

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Northeast		
High Sulfur	1.41	1.49
Medium Sulfur	1.94	1.62
Low Sulfur	--	--
Regional Average	1.43	1.53
Middle Atlantic		
High Sulfur	1.35	1.40
Medium Sulfur	1.49	1.55
Low Sulfur	1.79	1.85
Regional Average	1.49	1.53
South Atlantic		
High Sulfur	1.40	1.50
Medium Sulfur	1.66	1.67
Low Sulfur	1.83	1.89
Regional Average	1.57	1.62
East North Central		
High Sulfur	1.26	1.36
Medium Sulfur	1.46	1.52
Low Sulfur	1.67	1.74
Regional Average	1.42	1.49
East South Central		
High Sulfur	1.25	1.35
Medium Sulfur	1.47	1.52
Low Sulfur	1.68	1.77
Regional Average	1.34	1.42
West North Central		
High Sulfur	1.20	1.29
Medium Sulfur	1.04	1.00
Low Sulfur	1.17	1.21
Regional Average	1.12	1.11
West South Central		
High Sulfur	1.37	1.50
Medium Sulfur	1.06	1.29
Low Sulfur	1.40	1.48
Regional Average	1.18	1.36

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

($/106 Btu)
(1978 $'s)

	1990	1995
Mountain		
High Sulfur	--	--
Medium Sulfur	0.75	0.81
Low Sulfur	0.91	0.96
Regional Average	0.83	0.87
Pacific		
High Sulfur	--	--
Medium Sulfur	1.07	1.11
Low Sulfur	1.07	1.11
Regional Average	1.07	1.11
National Total		
High Sulfur	1.30	1.40
Medium Sulfur	1.32	1.38
Low Sulfur	1.33	1.37
Regional Average	1.32	1.38

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

1990 NATIONAL COAL TRANSPORTATION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.6	101.6	65.6	31.5	-	-	-	-	-	210.3
Central Appalachia	-	19.4	94.9	57.5	6.5	0.7	1.1	-	-	180.1
Southern Appalachia	-	-	6.9	-	5.4	-	-	-	-	12.3
Midwest	-	-	63.6	168.6	132.9	25.1	-	-	-	390.2
Central West	-	-	-	-	1.0	2.3	1.7	-	0.3	5.3
Gulf	-	-	-	-	-	-	71.8	-	-	71.8
Eastern Northern Great Plains	-	-	-	-	-	24.7	-	0.1	-	24.8
Western Northern Great Plains	-	-	-	26.9	15.2	72.3	196.0	105.1	14.9	430.4
Rocky Mountains	-	-	-	18.7	-	0.4	12.4	17.1	8.9	57.5
Southwest	-	-	-	-	-	-	15.6	32.2	3.7	51.5
Northwest	-	-	-	-	-	-	-	-	5.6	5.6
Total	11.6	121.0	231.0	303.2	161.0	125.5	298.6	154.5	33.4	1,439.8

1995 NATIONAL COAL TRANSPORTATION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.8	118.1	105.5	55.0	-	-	-	-	-	290.4
Central Appalachia	-	20.0	85.9	58.6	3.3	0.7	-	-	-	168.5
Southern Appalachia	-	-	5.3	-	5.4	-	-	-	-	10.7
Midwest	-	-	94.3	184.5	161.9	24.5	-	-	-	465.2
Central West	-	-	-	-	0.6	5.9	3.6	-	-	10.1
Gulf	-	-	-	-	-	-	61.8	-	-	61.8
Eastern Northern Great Plains	-	-	-	-	-	34.8	-	0.1	-	34.9
Western Northern Great Plains	-	-	-	23.8	29.8	86.8	267.5	150.3	38.9	597.1
Rocky Mountains	-	-	-	16.9	-	0.4	33.2	18.4	13.3	82.2
Southwest	-	-	-	-	-	-	16.0	30.0	-	46.0
Northwest	-	-	-	-	-	-	-	-	2.9	2.9
Total	11.8	138.1	291.0	338.8	201.0	153.1	382.1	198.8	55.1	1,769.8

1990 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR;
70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	Destination									
Origin	**New England**	**Middle Atlantic**	**South Atlantic**	**East North Central**	**East South Central**	**West North Central**	**West South Central**	**Mountain**	**Pacific**	**Total**
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	7.75	-	-	-	-	-	-	7.75
South Atlantic	-	5.40	-	-	-	-	-	-	-	5.40
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	2.04	-	-	-	-	-	-	2.04
West North Central	-	-	-	-	-	-	0.86	-	-	0.86
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	12.81	12.81
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	5.40	9.79	-	-	-	0.86	-	12.81	28.86

1995 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	3.70	-	-	-	-	-	-	3.70
South Atlantic	-	4.16	-	-	-	-	-	-	-	4.16
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	-	-	-	-	-	-	-	-
West North Central	-	-	-	0.71	-	-	-	-	-	0.71
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	12.68	12.68
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	4.16	3.70	0.71	-	-	-	-	12.68	21.25

NATIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW (percent capacity factor))

	1975	1990	1995
NATIONAL			
Nuclear	37.2	165.3 (66.9)	230.0 (66.9)
Coal	183.6	396.8 (58.0)	532.9 (54.4)
Existing*	183.6	197.9 (58.4)	197.9 (54.5)
NSPS	-	79.6 (55.4)	79.6 (55.3)
ANSPS	-	119.4 (58.9)	255.4 (54.0)
Oil/Gas	192.1	221.2 (19.3)	204.9 (14.8)
Steam*	147.3	141.2 (24.4)	120.7 (19.2)
Combined Cycle	2.7	6.6 (25.6)	7.5 (21.8)
Turbines	42.2	73.4 (9.0)	76.7 (7.1)
Hydro and Others	68.3	87.8 (44.0)	89.5 (43.5)
Total	481.2	871.1 (48.4)	1,057.3 (48.5)
Percent of Total			
Nuclear	7.7	19.0	21.8
Coal	38.2	45.6	50.4
Oil/Gas	39.9	25.4	19.4
Other	14.2	10.1	8.5

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* Powerplants under ESECA orders to convert from oil and/or gas to coal (14.3 GW) are assumed to convert by 1985.

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
New England		
Nuclear	10.1 (70.0)	14.0 (70.0)
Coal	4.0 (56.2)	5.7 (37.2)
Existing	4.0 (56.2)	4.0 (36.8)
NSPS	-	-
ANSPS	-	1.7 (38.0)
Oil/Gas	8.8 (28.5)	6.1 (20.9)
Steam	7.7 (30.7)	3.9 (27.4)
Combined Cycle	0.4 (30.6)	0.4 (30.6)
Turbines	0.8 (5.0)	1.8 (5.0)
Hydro and Others	2.9 (18.1)	2.9 (18.1)
Total	25.8 (47.8)	28.7 (47.8)
Percent of Total		
Nuclear	39.1	48.8
Coal	15.5	19.9
Oil/Gas	34.1	21.3
Other	11.2	10.1
Middle Atlantic		
Nuclear	26.2 (65.3)	36.4 (65.3)
Coal	35.1 (58.1)	44.8 (54.1)
Existing	20.1 (58.4)	20.1 (57.2)
NSPS	3.1 (70.0)	3.1 (68.0)
ANSPS	11.9 (54.6)	21.5 (49.2)
Oil/Gas	35.5 (22.2)	34.6 (20.1)
Steam	21.1 (31.0)	20.9 (29.3)
Combined Cycle	0.4 (29.2)	0.4 (29.2)
Turbines	14.0 (8.7)	13.3 (5.4)
Hydro and Others	8.0 (46.1)	9.0 (41.4)
Total	104.8 (46.8)	124.8 (47.0)
Percent of Total		
Nuclear	25.0	29.2
Coal	33.5	35.9
Oil/Gas	33.9	27.7
Other	7.6	7.2

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
South Atlantic		
Nuclear	32.2 (66.2)	44.7 (66.2)
Coal	80.7 (58.4)	115.1 (54.4)
Existing	47.0 (62.6)	47.0 (59.1)
NSPS	8.3 (36.7)	8.3 (40.3)
ANSPS	25.4 (57.8)	59.9 (52.7)
Oil/Gas	39.3 (21.0)	34.4 (14.7)
Steam	22.3 (28.8)	18.0 (20.9)
Combined Cycle	0.6 (35.9)	0.6 (25.0)
Turbines	16.4 (9.8)	15.7 (7.2)
Hydro and Others	10.4 (23.8)	10.5 (23.7)
Total	162.5 (48.7)	204.7 (48.7)
Percent of Total		
Nuclear	19.8	21.8
Coal	49.7	56.2
Oil/Gas	24.2	16.8
Other	6.4	5.1
East North Central		
Nuclear	33.0 (67.7)	45.9 (67.7)
Coal	86.2 (55.3)	100.2 (52.9)
Existing	62.9 (58.5)	62.9 (55.8)
NSPS	14.5 (44.9)	14.5 (46.7)
ANSPS	8.9 (49.0)	22.8 (48.9)
Oil/Gas	20.3 (18.4)	18.4 (14.0)
Steam	10.7 (25.6)	9.5 (18.6)
Combined Cycle	0.2 (19.1)	0.2 (12.1)
Turbines	9.4 (10.2)	8.6 (8.9)
Hydro and Others	1.7 (16.9)	1.7 (16.9)
Total	141.2 (52.4)	166.1 (52.4)
Percent of Total		
Nuclear	23.4	27.6
Coal	61.0	60.3
Oil/Gas	14.4	11.1
Other	1.2	1.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

(GW (percent capacity factor))

	1990	1995
East South Central		
Nuclear	23.0 (67.4)	32.0 (67.4)
Coal	59.9 (28.4)	76.6 (52.8)
Existing	30.2 (55.1)	30.2 (49.6)
NSPS	8.4 (48.5)	8.4 (48.1)
ANSPS	21.2 (58.4)	38.0 (56.4)
Oil/Gas	14.8 (11.4)	15.9 (8.8)
Steam	3.0 (18.7)	3.0 (12.1)
Combined Cycle	-	-
Turbines	11.8 (9.6)	12.9 (8.0)
Hydro and Others	6.7 (41.6)	6.8 (40.9)
Total	104.4 (50.9)	131.3 (50.4)
Percent of Total		
Nuclear	22.0	24.4
Coal	57.4	58.3
Oil/Gas	14.2	12.1
Other	6.4	5.2
West North Central		
Nuclear	9.1 (65.0)	12.6 (65.0)
Coal	40.0 (52.2)	49.3 (50.6)
Existing	18.4 (48.8)	18.4 (45.0)
NSPS	14.0 (58.3)	14.0 (56.0)
ANSPS	7.6 (49.0)	16.9 (52.4)
Oil/Gas	13.8 (8.8)	15.3 (7.0)
Steam	4.3 (12.2)	4.3 (6.9)
Combined Cycle	0.9 (25.0)	0.1 (8.0)
Turbines	9.5 (7.1)	11.0 (7.0)
Hydro and Others	4.1 (41.2)	4.1 (41.2)
Total	67.0 (44.3)	81.3 (44.2)
Percent of Total		
Nuclear	13.6	15.5
Coal	59.7	60.6
Oil/Gas	20.6	18.8
Other	6.1	5.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
West South Central		
Nuclear	13.1 (65.0)	18.2 (65.0)
Coal	46.3 (64.8)	80.2 (55.0)
Existing	2.2 (64.4)	2.2 (64.4)
NSPS	20.9 (65.0)	20.9 (65.0)
ANSPS	23.1 (64.7)	57.0 (51.0)
Oil/Gas	59.3 (19.7)	47.9 (12.7)
Steam	55.7 (20.4)	44.3 (13.0)
Combined Cycle	1.4 (12.9)	1.4 (12.9)
Turbines	2.2 (6.0)	2.2 (6.0)
Hydro and Others	2.5 (19.5)	2.5 (19.5)
Total	121.2 (41.8)	148.8 (42.0)
Percent of Total		
Nuclear	10.8	12.2
Coal	38.2	53.9
Oil/Gas	48.9	32.2
Other	2.1	1.7
Mountain		
Nuclear	4.3 (65.4)	5.9 (65.4)
Coal	40.7 (63.5)	50.5 (62.2)
Existing	11.8 (63.0)	11.8 (58.3)
NSPS	10.0 (62.8)	10.0 (60.7)
ANSPS	18.9 (64.1)	28.7 (64.3)
Oil/Gas	7.0 (13.5)	7.8 (11.6)
Steam	2.6 (19.0)	2.8 (14.4)
Combined Cycle	0.5 (17.3)	0.5 (13.7)
Turbines	3.9 (9.3)	4.4 (9.5)
Hydro and Others	9.2 (45.9)	9.6 (45.5)
Total	61.1 (55.2)	73.8 (54.9)
Percent of Total		
Nuclear	7.0	8.0
Coal	66.6	68.4
Oil/Gas	11.5	10.6
Other	15.1	13.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
Pacific		
Nuclear	14.4 (70.0)	20.1 (70.0)
Coal	4.0 (69.6)	10.6 (64.5)
Existing	1.3 (69.9)	1.3 (25.0)
NSPS	0.5 (70.0)	0.5 (70.0)
ANSPS	2.2 (70.0)	8.8 (70.0)
Oil/Gas	22.3 (21.7)	24.7 (20.3)
Steam	13.9 (24.8)	13.9 (26.1)
Combined Cycle	3.0 (29.9)	3.9 (24.6)
Turbines	5.4 (9.2)	6.9 (6.0)
Hydro and Others	42.4 (53.1)	42.4 (53.1)
Total	83.0 (48.4)	97.8 (49.5)
Percent of Total		
Nuclear	17.3	20.6
Coal	4.8	10.8
Oil/Gas	26.9	25.3
Other	51.1	43.4
National		
Nuclear	165.3 (66.9)	230.0 (66.9)
Coal	396.8 (58.0)	532.9 (54.4)
Existing*	197.9 (58.4)	197.9 (54.5)
NSPS	79.6 (55.4)	79.6 (55.3)
ANSPS	119.4 (58.9)	255.4 (54.0)
Oil/Gas	221.2 (19.3)	204.9 (14.8)
Steam*	141.2 (24.4)	120.7 (19.2)
Combined Cycle	6.6 (25.6)	7.5 (21.8)
Turbines	73.4 (9.0)	76.7 (7.1)
Hydro and Others	87.8 (44.0)	89.5 (43.5)
Total	871.1 (48.4)	1,057.3 (48.5)
Percent of Total		
Nuclear	19.0	21.8
Coal	45.6	50.4
Oil/Gas	25.4	19.4
Other	10.1	8.5

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
New England				
Capacity Full Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	1.724	(90.0)
Capacity Partially Scrubbed				
Existing	3.315	(79.8)	3.315	(79.3)
NSPS	-	-	-	-
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	3.315	(79.8)	3.315	(79.3)
NSPS	-	-	-	-
ANSPS	-	-	1.724	(90.0)
Middle Atlantic				
Capacity Fully Scrubbed				
Existing	2.245	(90.0)	2.245	(90.0)
NSPS	-	-	-	-
ANSPS	11.941	(90.0)	21.548	(90.0)
Capacity Partially Scrubbed				
Existing	3.026	(65.5)	3.019	(65.5)
NSPS	2.810	(64.1)	2.808	(64.1)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	5.271	(75.9)	5.264	(75.9)
NSPS	2.810	(64.1)	2.808	(64.1)
ANSPS	11.941	(90.0)	21.548	(90.0)
South Atlantic				
Capacity Fully Scrubbed				
Existing	2.555	(90.0)	2.555	(90.0)
NSPS	-	-	-	-
ANSPS	25.433	(90.0)	59.900	(90.0)
Capacity Partially Scrubbed				
Existing	2.639	(59.2)	2.830	(50.3)
NSPS	2.065	(66.3)	2.126	(64.1)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	5.194	(74.4)	5.385	(69.1)
NSPS	2.065	(66.3)	2.126	(64.1)
ANSPS	25.433	(90.0)	59.900	(90.0)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
East				
Capacity Fully Scrubbed				
Existing	4.800	(90.0)	4.800	(90.0)
NSPS	-	-	-	-
ANSPS	37.374	(90.0)	83.172	(90.0)
Capacity Partially Scrubbed				
Existing	5.665	(62.6)	9.164	(65.8)
NSPS	4.875	(65.0)	4.934	(64.1)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	10.465	(75.1)	13.964	(74.1)
NSPS	4.875	(65.0)	4.934	(64.1)
ANSPS	37.374	(90.0)	83.172	(90.0)
East North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	8.882	(90.0)	22.799	(90.0)
Capacity Partially Scrubbed				
Existing	7.079	(75.6)	7.200	(74.2)
NSPS	2.620	(52.1)	2.619	(52.0)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	7.079	(75.6)	7.200	(74.2)
NSPS	2.620	(52.1)	2.619	(52.0)
ANSPS	8.882	(90.0)	22.799	(90.0)
East South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	21.112	(90.0)	32.654	(90.0)
Capacity Partially Scrubbed				
Existing	4.842	(76.0)	4.839	(76.0)
NSPS	3.042	(65.3)	2.968	(67.7)
ANSPS	0.134	(70.0)	5.343	(69.8)
Total Capacity Scrubbed				
Existing	4.842	(76.0)	4.839	(76.0)
NSPS	3.042	(65.3)	2.968	(67.7)
ANSPS	21.246	(84.5)	37.997	(82.6)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
West North Central				
Capacity Fully Scrubbed				
Existing	–	–	–	–
NSPS	–	–	–	–
ANSPS	4.346	(90.0)	11.730	(90.0)
Capacity Partially Scrubbed				
Existing	–	–	–	–
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	3.301	(69.9)	5.162	(69.9)
Total Capacity Scrubbed				
Existing	–	–	–	–
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	7.647	(78.5)	16.892	(80.4)
West South Central				
Capacity Fully Scrubbed				
Existing	–	–	–	–
NSPS	–	–	–	–
ANSPS	14.312	(90.0)	22.802	(90.0)
Capacity Partially Scrubbed				
Existing	1.110	(64.1)	1.109	(64.1)
NSPS	5.094	(64.1)	5.094	(64.1)
ANSPS	8.820	(77.6)	34.191	(70.0)
Total Capacity Scrubbed				
Existing	1.110	(64.1)	1.109	(64.1)
NSPS	5.094	(64.1)	5.094	(64.1)
ANSPS	23.142	(79.3)	56.993	(76.0)
Mountain				
Capacity Fully Scrubbed				
Existing	–	–	–	–
NSPS	–	–	–	–
ANSPS	5.215	(90.0)	13.027	(90.0)
Capacity Partially Scrubbed				
Existing	1.994	(27.7)	1.992	(27.7)
NSPS	9.311	(57.1)	9.309	(55.5)
ANSPS	13.700	(71.7)	15.715	(71.4)
Total Capacity Scrubbed				
Existing	1.994	(27.7)	1.992	(27.7)
NSPS	9.311	(57.1)	9.309	(55.5)
ANSPS	18.915	(75.4)	28.742	(77.6)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
Pacific				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	2.150	(69.9)	8.798	(70.0)
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	2.150	(69.9)	8.798	(70.0)
Rest of West				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	5.215	(90.0)	13.027	(90.0)
Capacity Partially Scrubbed				
Existing	1.994	(27.7)	1.992	(27.7)
NSPS	9.311	(57.1)	9.309	(55.5)
ANSPS	15.850	(71.5)	24.513	(70.9)
Total Capacity Scrubbed				
Existing	1.994	(27.7)	1.992	(27.7)
NSPS	9.311	(57.1)	9.309	(55.5)
ANSPS	21.065	(76.0)	37.540	(77.5)
National				
Capacity Fully Scrubbed				
Existing	4.800	(90.0)	4.800	(90.0)
NSPS	-	-	-	-
ANSPS	91.240	(90.0)	186.183	(90.0)
Capacity Partially Scrubbed				
Existing	24.006	(68.7)	24.305	(67.1)
NSPS	29.944	(55.1)	29.926	(54.6)
ANSPS	28.115	(70.8)	69.209	(70.3)
Total Capacity Scrubbed				
Existing	28.806	(72.2)	29.105	(70.9)
NSPS	29.944	(55.1)	29.926	(54.6)
ANSPS	119.355	(81.5)	255.392	(80.9)

SLUDGE GENERATED UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

(10^3 tons)

	1990	1995
New England	897.0	812.7
Middle Atlantic	3,400.4	4,831.5
South Atlantic	7,004.9	12,799.0
EAST	11,302.3	18,443.2
EAST NORTH CENTRAL	4,279.4	7,007.0
EAST SOUTH CENTRAL	7,208.2	9,805.4
WEST NORTH CENTRAL	1,171.0	2,677.8
WEST SOUTH CENTRAL	4,593.8	7,121.4
Mountain	2,602.3	4,225.9
Pacific	111.3	389.2
WEST	2,713.6	4,615.1
TOTAL	31,268.2	49,669.8

UTILITY CAPITAL COSTS*
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^9 $'s)
(using 1978 dollars)

	1990	1995
National		
New Generation Capacity	297.7	466.2
Nuclear (GW)	140.2 (128.2)	211.3 (192.8)
Coal (GW)	140.7 (198.9)	236.8 (334.9)
NSPS	56.7 (79.6)	56.7 (79.6)
ANSPS	84.0 (119.4)	180.1 (255.4)
Oil/Gas	16.8 (48.6)	18.1 (52.2)
Combined Cycle (GW)	1.8 (3.9)	2.2 (4.8)
Turbine (GW)	15.0 (44.7)	15.9 (47.3)
Long Distance Transmission	6.7	6.9
Local Transmission and Distribution	179.1	269.6
Scrubbers (GW)	22.3 (172.4)	39.9 (308.7)
NSPS	2.9 (29.9)	2.9 (29.9)
ANSPS	15.9 (119.4)	33.5 (255.4)
Retrofit	3.5 (23.1)	3.5 (23.4)
Conversion to Western Coal	0.1	0.1
Total	506.7	783.5
Average Plant Cost		
Nuclear	1,093.6	1,096.0
Coal		
NSPS	712.6	712.6
ANSPS	703.5	705.1
Total	707.2	706.9
Oil/Gas		
Combined Cycle	456.6	458.0
Turbines	335.2	335.2
Total	344.9	346.6
Average Scrubber Cost		
NSPS	98.1	117.3
ANSPS	132.9	125.4
Retrofit	151.9	131.1
Total	129.4	129.3

(GW) -- Gigawatts.

* Gigawatts figures represent capacity built after 1975 rather than total.

CHANGE IN INCREMENTAL ANNUALIZED COST OF ELECTRICITY* UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU FLOOR; 0.5 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM REMOVAL
WET SCRUBBING
(Percentage Change in Rates from Current Standard)
(10^6 $'s)
(1978 $'s)

	1990		1995	
New England	3.5	(0.07)	16.4	(0.28)
Middle Atlantic	76.7	(0.78)	193.7	(1.18)
South Atlantic	263.3	(0.97)	733.0	(2.17)
EAST	343.5		943.1	
EAST NORTH CENTRAL	392.1	(0.75)	940.5	(1.53)
EAST SOUTH CENTRAL	203.2	(1.10)	418.1	(2.08)
WEST NORTH CENTRAL	47.2	(1.55)	(330.2)	(2.21)
WEST SOUTH CENTRAL	334.4	(2.92)	1,059.8	(4.27)
Mountain	253.7	(3.39)	386.9	(3.59)
Pacific	111.8	(0.83)	225.7	(1.60)
WEST	365.5		612.6	
Total Annualized Cost	1,685.9	(1.25)	3,643.9	(2.13)
Present Value of Change in Annualized Cost	19,156.4		36,708.5	
Objective Function	1,585.5		3,519.2	
Present Value of Change in Objective Function	18,095.8		35,429.7	

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* Individual regional estimates can be distorted by changes in transmission between regions, causing anomalies such that costs or emissions decrease in one region while they increase in all others.

CHANGE IN SO_2 EMISSIONS RELATIVE TO CURRENT* STANDARD UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU FLOOR; 0.5 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM REMOVAL
WET SCRUBBING
(10^3 tons)

	1990	1995
New England	(0.5)	16.8
Middle Atlantic	206.5	303.1
South Atlantic	244.0	697.0
EAST	450.0	1,016.9
EAST NORTH CENTRAL	(151.2)	(170.6)
EAST SOUTH CENTRAL	178.4	413.5
WEST NORTH CENTRAL	76.8	348.9
WEST SOUTH CENTRAL	456.2	885.1
Mountain	274.9	397.8
Pacific	58.7	241.7
WEST	333.6	639.5
TOTAL	1,343.8	3,133.3

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* Individual regional estimates can be distorted by changes in transmission between regions, causing anomalies such that costs or emissions decrease in one region while they increase in all others.

CHANGE IN ANNUALIZED COSTS PER TON REMOVED UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU FLOOR; 0.5 LBS. SO_2/MMBTU FLOOR; 70% MINIMUM REMOVAL
WET SCRUBBING
($/ton)

	1990	1995
EAST	763.3	927.4
CENTRAL	1,743.8	1,413.9
WEST	1,095.6	1,143.1
TOTAL	1,254.6	1,163.0

Change in costs between current NSPS (i.e., 1.2 pounds) and ANSPS divided by change in emissions.

COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

Sector	1990	1995
Electric Utility	919.9	1,148.6
Scrubbed	480.2	733.9
Not Scrubbed	438.7	414.7
Industrial	278.4	319.6
Metallurgical	99.9	104.2
Residential/Commercial	0.7	0.4
Synthetics	56.2	87.6
Export	76.7	80.5
Total	1,430.8	1,740.9

1990 COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	260.6	423.2	235.0	918.9
Scrubbed	-	98.7	250.6	130.9	480.2
Not Scrubbed	-	161.9	172.6	104.1	438.7
Industrial	-	184.7	0.7	92.9	278.4
Metallurgical	68.6	-	31.2	-	99.9
Residential/Commercial	-	0.2	0.5	-	0.7
Synthetics	-	2.6	27.2	26.4	56.2
Export	60.8	2.8	3.8	9.3	76.7
Total	129.5	451.0	486.7	363.6	1,430.8

1995 COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL

DRY SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	396.2	451.3	301.1	1,148.6
Scrubbed	-	239.8	295.5	198.7	733.9
Not Scrubbed	-	156.4	155.8	102.4	414.7
Industrial	-	213.5	14.0	92.2	319.6
Metallurgical	71.6	-	32.6	-	104.2
Residential/Commercial	-	0.1	0.3	-	0.4
Synthetics	-	5.3	38.4	44.0	87.6
Export	63.9	2.8	4.1	9.6	80.5
Total	135.5	617.9	540.6	446.9	1,740.9

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL DRY SCRUBBING

(10^3 tons)

	1975	1990	1995
New England			
Coal Plants			
Existing	48.4	139.8	108.1
NSPS	-	-	-
ANSPS	-	-	22.3
Oil/Gas Plants	101.8	108.7	51.6
Total	150.2	248.5	182.0
Middle Atlantic			
Coal Plants			
Existing	1,835.9	1,510.1	1,474.0
NSPS	-	97.2	103.0
ANSPS	-	132.8	206.9
Oil/Gas Plants	371.1	322.7	298.9
Total	2,207.6	2,062.8	2,082.7
South Atlantic			
Coal Plants			
Existing	2,632.2	3,126.8	3,077.7
NSPS	-	188.1	225.5
ANSPS	-	448.2	874.2
Oil/Gas Plants	746.1	476.0	281.7
Total	3,378.3	4,239.0	4,459.1
East			
Coal Plants			
Existing	4,516.5	4,776.7	4,659.8
NSPS	-	285.3	328.5
ANSPS	-	581.0	1,103.4
Oil/Gas Plants	1,219.6	907.4	632.2
Total	5,136.1	6,550.3	6,723.8
EAST NORTH CENTRAL			
Coal Plants			
Existing	6,771.8	4,991.0	4,789.8
NSPS	-	331.5	353.3
ANSPS	-	104.7	316.0
Oil/Gas Plants	103.4	120.0	83.7
Total	6,885.2	5,547.2	5,542.8

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^3 tons)

	1975	1990	1995
EAST SOUTH CENTRAL			
Coal Plants			
Existing	3,351.5	2,329.9	2,197.1
NSPS	-	236.4	223.9
ANSPS	-	330.8	637.0
Oil/Gas Plants	43.2	79.9	59.7
Total	3,394.7	2,977.0	3,117.7
WEST NORTH CENTRAL			
Coal Plants			
Existing	1,491.5	1,952.2	1,823.0
NSPS	-	409.7	435.2
ANSPS	-	61.4	173.6
Oil/Gas Plants	41.4	42.4	36.2
Total	1,532.9	2,465.6	2,468.1
WEST SOUTH CENTRAL			
Coal Plants			
Existing	203.7	149.8	149.8
NSPS	-	693.0	693.0
ANSPS	-	348.8	647.8
Oil/Gas Plants	209.0	545.8	305.4
Total	412.7	1,737.4	1,796.0
Mountain			
Coal Plants			
Existing	322.9	354.5	321.5
NSPS	-	168.8	174.9
ANSPS	-	258.5	393.0
Oil/Gas Plants	25.2	22.5	13.0
Total	358.1	804.3	902.4
Pacific			
Coal Plants			
Existing	47.6	77.4	35.7
NSPS	-	17.5	17.5
ANSPS	-	35.6	139.5
Oil/Gas Plants	148.1	100.8	106.8
Total	195.7	231.2	299.5

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL DRY SCRUBBING

(10^3 tons)

	1975	1990	1995
REST OF WEST			
Coal Plants			
Existing	380.5	431.9	357.2
NSPS	-	186.3	192.4
ANSPS	-	294.1	532.5
Oil/Gas Plants	173.3	123.3	119.8
Total	553.8	1,035.5	1,201.9
NATIONAL			
Coal Plants			
Existing	16,915.4	14,631.2	13,976.6
NSPS	-	2,142.2	2,226.4
ANSPS	-	1,720.8	3,410.3
Oil/Gas Plants	1,789.9	1,818.7	1,237.0
Total	18,705.3	20,312.9	20,850.2

Source for 1975 data: EPA National Emissions Data System, Computer Printout, May 1, 1978.

ANNUAL NATIONAL NO_x AND PARTICULATE EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL

DRY SCRUBBING

(10^3 tons)

	NO_x		TSP	
	1990	1995	1990	1995
NATIONAL				
Oil/Gas	1,302.5	926.1	158.2	110.0
Coal	7,027.3	8,405.7	794.4	849.5
Existing	3,924.2	3,632.0	517.5	480.8
NSPS	1,354.1	1,407.1	190.6	198.1
ANSPS	1,749.0	3,366.7	86.3	170.6
Total	8,329.8	9,331.8	952.6	959.4

NATIONAL UTILITY FUEL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
NATIONAL			
Coal	9.3	19.9	25.0
Existing	9.3	10.4	9.6
NSPS	-	3.8	4.0
ANSPS	-	5.8	11.4
Oil/Gas	6.2	4.2	3.1
Nuclear	1.7	9.7	13.5
Hydro and Other	2.0	3.4	3.4
Total	19.2	37.2	44.9
Percent of Total			
Coal	48.4	53.5	55.7
Oil/Gas	32.3	11.3	6.9
Nuclear	8.9	26.1	30.1
Hydro and Other	10.4	9.1	7.6

UTILITY OIL/GAS CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England	0.425	0.241	0.124
Middle Atlantic	0.824	0.786	0.706
South Atlantic	1.010	0.804	0.493
EAST	2.259	1.831	1.323
EAST NORTH CENTRAL	0.317	0.390	0.286
EAST SOUTH CENTRAL	0.112	0.166	0.142
WEST NORTH CENTRAL	0.289	0.131	0.131
WEST SOUTH CENTRAL	2.162	1.185	0.672
Mountain	0.249	0.090	0.071
Pacific	0.787	0.445	0.474
WEST	1.036	0.535	0.545
TOTAL	6.175	4.238	3.099
Oil for Coal Transportation		0.279	0.350
TOTAL		4.517	3.449

UTILITY COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England			
High Sulfur		0.197	0.191
Medium Sulfur		0.005	0.009
Low Sulfur		-	-
Total	0.047	0.203	0.200
Middle Atlantic			
High Sulfur		0.363	0.426
Medium Sulfur		1.050	1.122
Low Sulfur		0.334	0.425
Total	1.076	1.747	1.973
South Atlantic			
High Sulfur		1.432	2.018
Medium Sulfur		2.048	2.213
Low Sulfur		0.577	1.184
Total	1.789	4.057	5.416
EAST			
High Sulfur		1.992	2.635
Medium Sulfur		3.104	3.344
Low Sulfur		0.911	1.609
Total	2.912	6.007	7.588
EAST NORTH CENTRAL			
High Sulfur		1.409	1.774
Medium Sulfur		1.918	1.846
Low Sulfur		0.895	1.038
Total	2.670	4.222	4.659
EAST SOUTH CENTRAL			
High Sulfur		1.587	2.189
Medium Sulfur		0.840	0.976
Low Sulfur		0.373	0.296
Total	1.328	2.800	3.461
WEST NORTH CENTRAL			
High Sulfur		0.468	0.431
Medium Sulfur		0.683	0.881
Low Sulfur		0.666	0.891
Total	0.783	1.818	2.203

UTILITY COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
WEST SOUTH CENTRAL			
High Sulfur		-	-
Medium Sulfur		1.456	1.485
Low Sulfur		1.143	2.279
Total	0.119	2.598	3.764
Mountain			
High Sulfur		-	-
Medium Sulfur		1.003	1.176
Low Sulfur		1.228	1.521
Total	0.615	2.232	2.697
Pacific			
High Sulfur		-	-
Medium Sulfur		0.107	0.044
Low Sulfur		0.132	0.533
Total	0.069	0.239	0.577
REST OF WEST			
High Sulfur		-	-
Medium Sulfur		1.110	1.220
Low Sulfur		1.360	2.054
Total	0.685	2.471	3.274
NATIONAL			
High Sulfur		5.456	7.030
Medium Sulfur		9.111	9.752
Low Sulfur		5.348	8.128
Total	8.719	19.916	24.949

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Maine/Vt./New Hampshire				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Mass./Conn./Rhode Island				
ANSPS (Part)	-	--	-	-
ANSPS (Part)	-	--	-	-
ANSPS (Full)	1.724	BG	0.058	Ohio
ANSPS (No Scrub)	-	--	-	-
Total	1.724		0.058	
Pennsylvania, West				
ANSPS (Part)	2.237	BB	0.071	Southern West Virginia
ANSPS (Part)	2.970	BD	0.094	Southern West Virginia
ANSPS (Full)	0.377	BG	0.022	Northern West Virginia
Total	5.584		0.187	
Pennsylvania, East/N.J./N.Y.DS				
ANSPS (Part)	5.183	BB	0.144	Northern West Virginia
ANSPS (Full)	1.518	BG	0.083	Pennsylvania
ANSPS (No Scrub)	-	--	-	-
Total	6.701		0.227	
New York, Upstate				
ANSPS (Part)	4.639	BB	0.155	Pennsylvania
ANSPS (Part)	0.176	BD	0.006	Pennsylvania
ANSPS (Full)	2.251	BG	0.122	Ohio
Total	7.067		0.227	
Virginia/Md./Del.				
ANSPS (Part)	7.769	BB	0.241	Southern West Virginia
ANSPS (Full)	1.022	BG	0.056	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	8.791		0.296	
West Virginia				
ANSPS (Part)	1.623	BB	0.048	Southern West Virginia
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	1.623		0.048	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
North & South Carolina				
ANSPS (Part)	12.351	BB	0.402	Southern West Virginia
ANSPS (Full)	0.137	BG	0.007	West Kentucky
ANSPS (No Scrub)	-	--	-	-
Total	12.488		0.410	
Georgia/North Florida				
ANSPS (Part)	6.969	BD	0.205	Illinois
ANSPS (Full)	14.214	BG	0.823	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	21.173		1.027	
South Florida				
ANSPS (Part)	7.093	BB	0.237	East Kentucky
ANSPS (Part)	0.681	BD	0.023	East Kentucky
ANSPS (Full)	10.761	BG	0.623	Northern West Virginia
Total	18.534		0.882	
Ohio, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Ohio, Central				
ANSPS (Full)	2.952	BD	0.099	Illinois & East Kentucky
ANSPS (Full)	3.748	BG	0.217	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	6.700		0.316	
Ohio, South				
ANSPS (Part)	5.032	BB	0.176	Southern West Virginia
ANSPS (Full)	0.066	BG	0.004	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	5.098		0.180	
Michigan				
ANSPS (Part)	1.947	BD	0.067	Illinois
ANSPS (Full)	4.607	BG	0.267	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	6.554		0.333	

1995 ANSPS COAL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Illinois				
ANSPS (Part)	1.305	BB	0.041	East Kentucky
ANSPS (Part)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	1.305		0.041	
Indiana				
ANSPS (Part)	0.622	BD	0.019	Illinois
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	0.622		0.019	
Wisconsin				
ANSPS (Part)	1.790	BB	0.060	Wyoming
ANSPS (Part)	1.044	BD	0.035	Wyoming
ANSPS (Full)	-	--	-	-
Total	2.835		0.095	
Kentucky, East				
ANSPS (Part)	2.071	BD	0.061	Indiana
ANSPS (Full)	1.630	BG	0.094	Indiana
ANSPS (No Scrub)	-	--	-	-
Total	3.701		0.155	
Kentucky, West				
ANSPS (Part)	7.310	BD	0.209	Indiana
ANSPS (Full)	6.971	BG	0.379	Indiana & Illinois
ANSPS (No Scrub)	-		-	-
Total	14.281		0.588	
Tennessee, East				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.527	BG	0.018	Indiana
ANSPS (No Scrub)	-	--	-	-
Total	0.527		0.018	

1995 ANSPS COAL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL

DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Tennessee, West				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	14.190	BG	0.715	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	14.190		0.715	
Alabama/Mississippi				
ANSPS (Part)	0.962	BB	0.034	Wyoming
ANSPS (Part)	1.997	BD	0.070	Alabama & Illinois
ANSPS (Full)	3.259	BG	0.189	West Kentucky
Total	6.218		0.292	
North & South Dakota/Minnesota				
ANSPS (Part)	0.927	SA	0.030	West Montana
ANSPS (Part)	2.000	LA	0.067	North Dakota
ANSPS (Part)	1.207	LD	0.045	North Dakota
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	4.133		0.142	
Kansas/Nebraska				
ANSPS (Part)	0.926	BB	0.028	South Colorado
ANSPS (Part)	2.201	BD	0.066	South Colorado
ANSPS (Part)	1.525	SB	0.084	Wyoming
ANSPS (Full)	-	--	-	-
Total	4.652		0.178	
Iowa				
ANSPS (Part)	0.044	BB	0.001	Wyoming
ANSPS (Part)	1.921	BD	0.060	Wyoming
ANSPS (Part)	3.189	SA	0.176	West Montana
ANSPS (Part)	0.089	SB	0.003	West Montana
ANSPS (Full)	-	--	-	-
Total	5.253		0.240	
Missouri				
ANSPS (Full)	2.939	BD	0.091	Wyoming
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	2.939		0.091	

1995 ANSPS COAL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL

DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Arkansas/Oklahoma/Louisiana				
ANSPS (Part)	9.801	BB	0.331	Utah
ANSPS (Part)	1.671	BD	0.088	Wyoming
ANSPS (Part)	6.618	SB	0.365	Wyoming
ANSPS (Full)	-	--	-	-
Total	18.090		0.785	
Texas				
ANSPS (Part)	12.520	BA	0.348	South Colorado
ANSPS (Part)	8.943	BB	0.359	South Colorado
ANSPS (Part)	9.057	BD	0.477	New Mexico & South Colorado
ANSPS (Part)	0.161	SB	0.009	Wyoming
ANSPS (Part)	0.311	SD	0.017	West Montana
ANSPS (Full)	8.208	LF	0.484	Texas
Total	39.201		1.693	
Idaho				
ANSPS (Part)	0.840	BD	0.029	Wyoming
ANSPS (Part)	0.596	SB	0.021	Wyoming
ANSPS (Part)	4.338	SD	0.255	Wyoming
Total	5.774		0.305	
Montana				
ANSPS (Part)	5.181	SA	0.304	West Montana
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	5.181		0.304	
Wyoming				
ANSPS (Part)	0.357	SA	0.013	West Montana & Wyoming
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	0.357		0.013	
Utah				
ANSPS (Part)	1.298	BB	0.053	Utah
ANSPS (Part)	0.039	SB	0.002	West Montana
ANSPS (Full)	-	--	-	-
Total	1.338		0.055	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Nevada				
ANSPS (Part)	1.197	BB	0.059	Utah
ANSPS (Full)	–	--	–	–
ANSPS (No Scrub)	–	--	–	–
Total	1.197		0.059	
Colorado				
ANSPS (Part)	2.943	BA	0.100	South Colorado
ANSPS (Part)	0.023	BD	0.001	New Mexico
ANSPS (Part)	5.112	SA	0.299	Wyoming
Total	8.078		0.400	
Arizona				
ANSPS (Part)	1.767	BB	0.082	New Mexico
ANSPS (Part)	4.123	BD	0.217	New Mexico
ANSPS (Full)	–	--	–	–
Total	5.890		0.299	
New Mexico				
ANSPS (Part)	2.217	BD	0.120	New Mexico
ANSPS (Full)	–	--	–	–
ANSPS (No Scrub)	–	--	–	–
Total	2.217		0.120	
Washington/Oregon				
ANSPS (Part)	0.009	BB	0.001	Utah
ANSPS (Part)	0.005	BD	0.000	Wyoming
ANSPS (Part)	8.564	SA	0.503	West Montana
ANSPS (Part)	0.220	SD	0.013	Washington
Total	8.798		0.517	
California, North				
ANSPS (Part)	–	--	–	–
ANSPS (Full)	–	--	–	–
ANSPS (No Scrub)	–	--	–	–
Total	–		–	
California, South				
ANSPS (Part)	–	--	–	–
ANSPS (Full)	–	--	–	–
ANSPS (No Scrub)	–	--	–	–
Total	–		–	

AGGREGATED REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia	158.2	213.9	271.4
Central Appalachia	211.1	191.2	201.8
Southern Appalachia	22.9	13.7	12.9
APPALACHIA	392.1	418.8	486.1
MIDWEST	138.6	372.4	452.7
Eastern Northern Great Plains	8.5	27.7	34.1
Western Northern Great Plains	45.2	407.1	541.6
NORTHERN GREAT PLAINS	53.7	434.8	575.7
Central West	9.5	5.3	10.0
Gulf	10.0	68.9	61.8
Rockies	14.0	70.5	106.8
Southwest	15.7	55.0	47.2
Northwest	4.5	5.6	1.9
REST OF WEST	50.0	205.2	227.6
TOTAL	634.6	1,431.2	1,742.1

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia			
Metallurgical	13.5	19.1	27.8
High Sulfur	107.1	85.3	99.7
Medium Sulfur	37.4	109.1	143.3
Low Sulfur	0.2	0.4	0.7
Total	158.1	213.9	271.4
Central Appalachia			
Metallurgical	83.0	133.4	157.0
High Sulfur	23.6	4.2	-
Medium Sulfur	91.9	34.7	24.6
Low Sulfur	12.6	18.9	20.2
Total	211.1	191.2	201.8
Southern Appalachia			
Metallurgical	1.7	5.1	6.5
High Sulfur	-	-	-
Medium Sulfur	21.2	4.4	1.0
Low Sulfur	-	4.2	5.4
Total	22.9	13.7	12.9
APPALACHIA			
Metallurgical	98.2	157.7	191.3
High Sulfur	130.7	89.5	99.7
Medium Sulfur	150.5	148.2	168.8
Low Sulfur	12.8	23.5	26.3
Total	392.1	418.8	486.1
MIDWEST			
Metallurgical	-	-	-
High Sulfur	131.6	264.8	331.2
Medium Sulfur	7.1	106.7	119.8
Low Sulfur	-	1.0	1.7
Total	138.6	372.4	452.7
Eastern Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	0.3	6.6	10.3
Medium Sulfur	7.8	16.8	17.2
Low Sulfur	0.4	4.2	6.7
Total	8.5	27.7	34.1

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Western Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	7.6	109.4	142.0
Low Sulfur	37.6	297.7	399.6
Total	45.2	407.1	541.6
NORTHERN GREAT PLAINS			
Metallurgical	-	-	-
High Sulfur	0.3	6.6	10.3
Medium Sulfur	15.4	126.2	159.2
Low Sulfur	38.0	302.0	406.2
Total	53.8	434.8	575.7
Central West			
Metallurgical	0.3	0.1	0.1
High Sulfur	8.4	3.1	6.0
Medium Sulfur	0.8	1.4	2.9
Low Sulfur	-	0.6	1.0
Total	8.5	5.3	10.0
Gulf			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	10.0	68.9	61.8
Low Sulfur	-	-	-
Total	10.0	68.9	61.8
Rockies			
Metallurgical	2.9	5.5	4.6
High Sulfur	-	-	-
Medium Sulfur	0.8	9.1	16.8
Low Sulfur	10.4	55.8	85.4
Total	14.1	70.5	106.8
Southwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	15.2	16.0	1.7
Low Sulfur	0.5	39.0	45.5
Total	15.7	55.0	47.2

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.56 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Northwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	3.7	5.6	1.9
Low Sulfur	0.8	-	-
Total	4.5	5.6	1.9
WEST			
Metallurgical	3.3	5.6	4.7
High Sulfur	8.4	3.1	6.0
Medium Sulfur	30.4	101.0	85.1
Low Sulfur	11.7	95.5	131.9
Total	53.7	205.2	227.6
TOTAL			
Metallurgical	101.7	163.3	196.0
High Sulfur	147.8	364.0	447.1
Medium Sulfur	197.0	482.1	533.0
Low Sulfur	62.5	421.9	566.0
Total	509.0	1,431.2	1,742.1

MINE-MOUTH PRICE
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Northern Appalachia		
High Sulfur	1.10	1.16
Medium Sulfur	1.17	1.20
Low Sulfur	1.57	1.67
Regional Average	1.18	1.24
Central Appalachia		
High Sulfur	1.16	1.24
Medium Sulfur	1.33	1.42
Low Sulfur	1.55	1.68
Regional Average	1.52	1.65
Southern Appalachia		
High Sulfur	--	--
Medium Sulfur	1.33	1.46
Low Sulfur	1.58	1.68
Regional Average	1.52	1.69
Midwest		
High Sulfur	1.03	1.13
Medium Sulfur	1.32	1.41
Low Sulfur	1.60	1.73
Regional Average	1.12	1.21
Eastern Northern Great Plains		
High Sulfur	0.42	0.42
Medium Sulfur	0.43	0.43
Low Sulfur	0.45	0.50
Regional Average	0.43	0.44
Western Northern Great Plains (Bituminous)		
High Sulfur	--	--
Medium Sulfur	0.95	1.05
Low Sulfur	1.06	1.16
Regional Average	1.02	1.11
Western Northern Great Plains (Subbituminous)		
High Sulfur	--	--
Medium Sulfur	0.42	0.41
Low Sulfur	0.51	0.54
Regional Average	0.49	0.51

MINE-MOUTH PRICE
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Central West		
High Sulfur	1.14	1.23
Medium Sulfur	1.30	1.38
Low Sulfur	1.48	1.58
Regional Average	1.24	1.32
Gulf		
High Sulfur	--	--
Medium Sulfur	0.56	0.99
Low Sulfur	--	--
Regional Average	0.56	0.99
Rocky Mountain		
High Sulfur	--	--
Medium Sulfur	0.99	1.14
Low Sulfur	1.04	1.19
Regional Average	1.07	1.20
Southwest		
High Sulfur	--	--
Medium Sulfur	0.76	0.98
Low Sulfur	0.71	0.91
Regional Average	0.72	0.91
Northwest		
High Sulfur	--	--
Medium Sulfur	0.90	0.93
Low Sulfur	--	--
Regional Average	0.90	0.93
National		
High Sulfur	1.04	1.13
Medium Sulfur	1.01	1.09
Low Sulfur	0.74	0.80
Regional Average	1.03	1.10

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Northeast		
High Sulfur	1.43	1.49
Medium Sulfur	1.94	2.05
Low Sulfur	--	--
Regional Average	1.44	1.51
Middle Atlantic		
High Sulfur	1.42	1.49
Medium Sulfur	1.49	1.54
Low Sulfur	1.95	2.07
Regional Average	1.56	1.64
South Atlantic		
High Sulfur	1.40	1.49
Medium Sulfur	1.57	1.63
Low Sulfur	1.88	2.06
Regional Average	1.55	1.67
East North Central		
High Sulfur	1.23	1.34
Medium Sulfur	1.52	1.59
Low Sulfur	1.69	1.79
Regional Average	1.46	1.54
East South Central		
High Sulfur	1.24	1.33
Medium Sulfur	1.54	1.64
Low Sulfur	1.74	1.84
Regional Average	1.39	1.46
West North Central		
High Sulfur	1.19	1.28
Medium Sulfur	1.07	1.16
Low Sulfur	1.21	1.21
Regional Average	1.15	1.20
West South Central		
High Sulfur	-	-
Medium Sulfur	0.94	1.28
Low Sulfur	1.45	1.53
Regional Average	1.17	1.43

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL

DRY SCRUBBING
($\$/10^6$ Btu)
(1978 $'s)

	1990	1995
Mountain		
High Sulfur	--	--
Medium Sulfur	0.78	0.98
Low Sulfur	0.93	0.99
Regional Average	0.86	0.99
Pacific		
High Sulfur	--	--
Medium Sulfur	1.03	1.09
Low Sulfur	1.07	1.11
Regional Average	1.05	1.11
National Total		
High Sulfur	1.29	1.39
Medium Sulfur	1.32	1.44
Low Sulfur	1.43	1.52
Regional Average	1.34	1.45

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

1990 NATIONAL COAL TRANSPORTATION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.5	96.2	73.0	32.7	-	-	-	-	-	213.4
Central Appalachia	0.1	22.9	99.2	62.5	5.0	0.7	0.8	-	-	191.2
Southern Appalachia	-	-	7.3	-	6.4	-	-	-	-	13.7
Midwest	-	-	56.5	159.3	129.5	27.1	-	-	-	372.4
Central West	-	-	-	-	1.7	2.7	0.6	-	0.2	5.2
Gulf	-	-	-	-	-	-	68.9	-	-	68.9
Eastern Northern Great Plains	-	-	-	-	-	27.5	-	0.2	-	27.7
Western Northern Great Plains	-	-	-	27.9	16.7	58.9	191.8	96.8	15.1	407.2
Rocky Mountains	-	-	-	19.0	-	5.2	15.9	21.7	8.7	70.5
Southwest	-	-	-	-	-	-	17.7	33.8	3.6	55.1
Northwest	-	-	-	-	-	-	-	-	5.6	5.6
Total	11.6	119.1	236.0	301.4	159.3	122.1	295.7	152.5	33.2	1,430.9

1995 NATIONAL COAL TRANSPORTATION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.6	109.0	100.0	49.8	-	-	-	-	-	270.4
Central Appalachia	-	23.6	105.2	70.2	2.1	0.7	-	-	-	201.8
Southern Appalachia	-	-	6.4	-	6.5	-	-	-	-	12.9
Midwest	-	-	83.0	172.6	172.4	24.4	-	-	-	452.4
Central West	-	-	-	-	1.4	5.3	3.2	-	-	9.9
Gulf	-	-	-	-	-	-	61.8	-	-	61.8
Eastern Northern Great Plains	-	-	-	-	-	34.0	-	0.1	-	34.1
Western Northern Great Plains	-	-	-	26.7	14.5	81.6	238.2	141.3	39.3	541.6
Rocky Mountains	-	-	-	16.5	-	2.6	55.0	21.7	10.9	106.7
Southwest	-	-	-	-	-	-	12.3	32.3	2.7	47.3
Northwest	-	-	-	-	-	-	-	-	1.9	1.9
Total	11.6	132.6	294.6	335.8	196.9	148.6	370.5	195.4	54.8	1,740.8

1990 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	3.70	-	-	-	-	-	-	3.70
South Atlantic	-	6.36	-	-	-	-	-	-	-	6.36
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	1.30	-	-	-	-	-	-	1.30
West North Central	-	-	-	-	-	-	-	-	-	-
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	13.01	13.01
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	6.36	5.00	-	-	-	-	-	13.01	24.37

1995 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR;
33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	3.70	-	-	-	-	-	-	3.70
South Atlantic	-	6.73	-	-	-	-	-	-	-	6.73
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	-	-	-	-	-	-	-	-
West North Central	-	-	-	0.71	-	-	-	-	-	0.71
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	12.68	12.68
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	6.73	3.70	0.71	-	-	-	-	12.68	23.82

NATIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING

(GW (percent capacity factor))

	1975	1990	1995
NATIONAL			
Nuclear	37.2	165.3 (66.9)	230.0 (66.9)
Coal	183.6	401.9 (57.6)	537.3 (54.1)
Existing*	183.6	197.9 (59.4)	197.9 (54.9)
NSPS	-	80.5 (56.4)	80.5 (58.9)
ANSPS	-	123.4 (55.5)	258.8 (52.0)
Oil/Gas	192.1	216.4 (19.1)	200.9 (14.5)
Steam*	147.3	140.8 (24.1)	119.2 (18.8)
Combined Cycle	2.7	6.6 (22.5)	7.5 (20.9)
Turbines	42.2	69.0 (8.6)	74.2 (7.0)
Hydro and Others	68.3	87.8 (44.0)	89.5 (43.5)
Total	481.2	871.3 (48.4)	1,057.6 (48.5)
Percent of Total			
Nuclear	7.7	19.0	21.7
Coal	38.2	46.1	50.8
Oil/Gas	39.9	24.8	19.0
Other	14.2	10.1	8.5

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* Powerplants under ESECA orders to convert from oil and/or gas to coal (14.3 GW) are assumed to convert by 1985.

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.56 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
New England		
Nuclear	10.1 (70.0)	14.0 (70.0)
Coal	4.0 (56.2)	5.7 (37.2)
Existing	4.0 (56.2)	4.0 (36.8)
NSPS	-	-
ANSPS	-	1.7 (38.0)
Oil/Gas	8.8 (28.5)	6.1 (20.9)
Steam	7.7 (30.7)	3.9 (27.4)
Combined Cycle	0.4 (30.6)	0.4 (30.6)
Turbines	0.8 (5.0)	1.8 (5.0)
Hydro and Others	2.9 (18.1)	2.9 (18.1)
Total	25.8 (47.8)	28.7 (47.8)
Percent of Total		
Nuclear	39.1	48.8
Coal	15.5	19.9
Oil/Gas	34.1	21.3
Other	11.2	10.1
Middle Atlantic		
Nuclear	26.2 (65.3)	36.4 (65.3)
Coal	34.7 (57.2)	42.6 (53.0)
Existing	20.1 (61.9)	20.1 (60.6)
NSPS	3.1 (65.7)	3.1 (70.0)
ANSPS	11.5 (46.7)	19.4 (42.5)
Oil/Gas	34.8 (22.1)	34.3 (20.1)
Steam	21.1 (31.0)	20.9 (29.2)
Combined Cycle	0.4 (29.2)	0.4 (22.6)
Turbines	13.3 (7.9)	13.0 (5.3)
Hydro and Others	8.0 (46.1)	9.0 (41.4)
Total	103.7 (46.6)	122.3 (46.6)
Percent of Total		
Nuclear	25.3	29.8
Coal	33.5	34.8
Oil/Gas	33.6	28.0
Other	7.7	7.4

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
South Atlantic		
Nuclear	32.2 (66.2)	44.7 (66.2)
Coal	83.4 (58.4)	119.0 (54.6)
Existing	47.0 (62.9)	47.2 (60.9)
NSPS	9.2 (40.1)	9.2 (49.5)
ANSPS	27.3 (56.9)	62.6 (50.6)
Oil/Gas	38.4 (20.6)	33.3 (14.1)
Steam	22.3 (27.5)	18.0 (19.2)
Combined Cycle	0.6 (35.9)	0.6 (25.0)
Turbines	15.4 (10.1)	14.7 (7.3)
Hydro and Others	10.4 (23.8)	10.5 (23.7)
Total	164.3 (48.9)	207.3 (49.0)
Percent of Total		
Nuclear	19.6	21.6
Coal	50.8	57.4
Oil/Gas	23.4	16.1
Other	6.3	5.7
East North Central		
Nuclear	33.0 (67.7)	45.9 (67.7)
Coal	87.0 (55.0)	100.2 (52.9)
Existing	62.9 (58.7)	62.9 (55.8)
NSPS	14.5 (46.2)	14.5 (46.7)
ANSPS	9.7 (44.1)	22.8 (48.9)
Oil/Gas	19.5 (18.2)	18.4 (14.0)
Steam	10.7 (25.3)	9.5 (18.6)
Combined Cycle	0.2 (19.1)	0.2 (12.1)
Turbines	8.6 (9.3)	8.6 (8.9)
Hydro and Others	1.7 (16.9)	1.7 (16.9)
Total	141.2 (52.4)	166.1 (52.4)
Percent of Total		
Nuclear	23.4	27.6
Coal	61.6	60.3
Oil/Gas	13.8	11.1
Other	1.2	1.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
East South Central		
Nuclear	23.0 (67.4)	32.0 (67.4)
Coal	59.9 (28.4)	77.5 (52.4)
Existing	30.2 (55.1)	30.2 (50.0)
NSPS	8.4 (48.5)	8.4 (54.3)
ANSPS	21.2 (58.4)	38.9 (53.9)
Oil/Gas	14.8 (11.4)	15.0 (8.0)
Steam	3.0 (18.7)	3.0 (11.2)
Combined Cycle	-	-
Turbines	11.8 (9.6)	12.0 (7.2)
Hydro and Others	6.7 (41.6)	6.8 (40.9)
Total	104.4 (50.9)	131.3 (50.4)
Percent of Total		
Nuclear	22.0	24.4
Coal	57.4	59.0
Oil/Gas	14.2	11.4
Other	6.4	5.2
West North Central		
Nuclear	9.1 (65.0)	12.6 (65.0)
Coal	39.7 (51.4)	49.4 (50.6)
Existing	18.4 (52.4)	18.4 (48.1)
NSPS	14.0 (57.8)	14.0 (61.6)
ANSPS	7.4 (36.7)	17.0 (44.3)
Oil/Gas	13.3 (8.1)	15.3 (7.0)
Steam	4.3 (10.4)	4.3 (6.9)
Combined Cycle	0.9 (8.0)	0.9 (8.0)
Turbines	8.9 (7.0)	11.0 (7.0)
Hydro and Others	4.1 (41.2)	4.1 (41.2)
Total	66.2 (44.0)	81.4 (44.1)
Percent of Total		
Nuclear	13.7	15.5
Coal	60.0	60.7
Oil/Gas	20.1	18.8
Other	6.2	5.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
West South Central		
Nuclear	13.1 (65.0)	18.2 (65.0)
Coal	47.2 (64.8)	80.2 (55.0)
Existing	2.2 (64.8)	2.2 (64.4)
NSPS	20.9 (65.0)	20.9 (65.0)
ANSPS	24.0 (64.7)	57.0 (51.0)
Oil/Gas	59.3 (19.7)	47.9 (12.7)
Steam	55.7 (20.4)	44.3 (13.0)
Combined Cycle	1.4 (12.9)	1.4 (12.9)
Turbines	2.2 (6.0)	2.2 (6.0)
Hydro and Others	2.5 (19.5)	2.5 (19.5)
Total	122.1 (42.0)	148.8 (42.0)
Percent of Total		
Nuclear	10.7	12.2
Coal	38.7	53.9
Oil/Gas	48.6	32.2
Other	2.0	1.7
Mountain		
Nuclear	4.3 (65.4)	5.9 (65.4)
Coal	41.6 (62.9)	51.8 (61.2)
Existing	11.8 (62.1)	11.8 (55.3)
NSPS	10.0 (61.8)	10.0 (65.1)
ANSPS	19.8 (64.0)	30.0 (62.2)
Oil/Gas	6.6 (12.5)	6.6 (9.2)
Steam	2.4 (16.9)	1.6 (6.8)
Combined Cycle	0.5 (13.7)	0.5 (13.7)
Turbines	3.6 (9.3)	4.4 (9.5)
Hydro and Others	9.2 (45.9)	9.6 (45.5)
Total	61.5 (55.2)	73.9 (54.8)
Percent of Total		
Nuclear	7.0	8.0
Coal	67.6	70.1
Oil/Gas	10.7	8.9
Other	15.0	13.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
Pacific		
Nuclear	14.4 (70.0)	20.1 (70.0)
Coal	4.0 (69.9)	10.6 (64.5)
Existing	1.3 (69.6)	1.3 (25.0)
NSPS	0.5 (70.0)	0.5 (70.0)
ANSPS	2.2 (70.0)	8.8 (70.0)
Oil/Gas	22.3 (21.7)	24.7 (20.3)
Steam	13.9 (24.8)	13.9 (26.1)
Combined Cycle	3.0 (29.9)	3.9 (24.6)
Turbines	5.4 (9.2)	6.9 (6.0)
Hydro and Others	42.4 (53.1)	42.4 (53.1)
Total	83.0 (48.4)	97.8 (49.5)
Percent of Total		
Nuclear	17.3	20.6
Coal	4.8	10.8
Oil/Gas	26.9	25.3
Other	51.1	43.4
National		
Nuclear	165.3 (66.9)	230.0 (66.9)
Coal	401.9 (57.6)	537.3 (54.1)
Existing*	197.9 (59.4)	197.9 (54.9)
NSPS	80.5 (56.4)	80.5 (58.9)
ANSPS	123.4 (55.5)	258.8 (52.0)
Oil/Gas	216.4 (19.1)	200.9 (14.5)
Steam*	140.8 (24.1)	119.2 (18.8)
Combined Cycle	6.6 (22.5)	7.5 (20.9)
Turbines	69.0 (8.6)	74.2 (7.0)
Hydro and Others	87.8 (44.0)	89.5 (43.5)
Total	871.3 (48.4)	1,057.6 (48.5)
Percent of Total		
Nuclear	19.0	21.7
Coal	46.1	50.8
Oil/Gas	24.8	19.0
Other	10.1	8.5

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL

DRY SCRUBBING

(GW)

	1990		1995	
	GW	(%)	GW	(%)
New England				
Capacity Full Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	1.724	(90.0)
Capacity Partially Scrubbed				
Existing	3.315	(79.8)	3.315	(79.3)
NSPS	-	-	-	-
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	3.315	(79.8)	3.315	(79.3)
NSPS	-	-	-	-
ANSPS	-	-	1.724	(90.0)
Middle Atlantic				
Capacity Fully Scrubbed				
Existing	1.901	(90.0)	1.901	(90.0)
NSPS	-	-	-	-
ANSPS	2.573	(90.0)	4.146	(90.0)
Capacity Partially Scrubbed				
Existing	6.444	(42.8)	6.441	(48.4)
NSPS	2.678	(64.1)	2.678	(64.1)
ANSPS	8.961	(59.1)	15.207	(60.2)
Total Capacity Scrubbed				
Existing	8.345	(53.6)	8.342	(57.9)
NSPS	2.678	(64.1)	2.678	(64.1)
ANSPS	11.534	(64.8)	19.353	(65.4)
South Atlantic				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	15.753	(90.0)	26.134	(90.0)
Capacity Partially Scrubbed				
Existing	23.345	(51.2)	22.265	(51.8)
NSPS	2.505	(57.6)	3.199	(64.4)
ANSPS	11.505	(60.1)	36.475	(60.2)
Total Capacity Scrubbed				
Existing	23.345	(51.2)	22.265	(51.8)
NSPS	2.505	(57.6)	3.199	(64.4)
ANSPS	27.258	(74.3)	62.609	(70.4)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
East				
Capacity Fully Scrubbed				
Existing	1.901	(90.0)	1.901	(90.0)
NSPS	-	-	-	-
ANSPS	18.326	(90.0)	32.004	(90.0)
Capacity Partially Scrubbed				
Existing	33.104	(52.4)	32.021	(54.0)
NSPS	5.183	(61.0)	5.877	(64.3)
ANSPS	20.466	(59.7)	51.682	(60.2)
Total Capacity Scrubbed				
Existing	35.005	(54.5)	33.922	(56.0)
NSPS	5.183	(61.0)	5.877	(64.3)
ANSPS	38.792	(74.0)	83.686	(71.6)
East North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	1.465	(90.0)	8.421	(90.0)
Capacity Partially Scrubbed				
Existing	7.532	(74.3)	7.532	(74.3)
NSPS	4.519	(45.4)	4.462	(46.7)
ANSPS	8.187	(63.3)	14.114	(62.4)
Total Capacity Scrubbed				
Existing	7.532	(74.3)	7.532	(74.3)
NSPS	4.519	(45.4)	4.462	(46.7)
ANSPS	9.652	(66.5)	23.114	(70.5)
East South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	15.293	(90.0)	26.577	(90.0)
Capacity Partially Scrubbed				
Existing	4.865	(75.8)	4.870	(75.8)
NSPS	4.075	(52.1)	5.445	(54.9)
ANSPS	6.324	(64.9)	12.341	(66.7)
Total Capacity Scrubbed				
Existing	4.865	(75.8)	4.870	(75.8)
NSPS	4.075	(52.1)	5.445	(54.9)
ANSPS	21.617	(78.8)	38.918	(78.9)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
West North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	7.356	(52.7)	16.977	(53.5)
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	7.356	(52.7)	16.977	(53.5)
West South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	8.208	(90.0)	8.208	(90.0)
Capacity Partially Scrubbed				
Existing	1.110	(64.1)	1.108	(64.1)
NSPS	5.096	(64.1)	5.095	(64.1)
ANSPS	15.812	(64.3)	49.082	(53.8)
Total Capacity Scrubbed				
Existing	1.110	(64.1)	1.108	(64.1)
NSPS	5.096	(64.1)	5.095	(64.1)
ANSPS	24.020	(70.9)	57.290	(58.1)
Mountain				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	0.137	(90.0)	2.319	(90.0)
Capacity Partially Scrubbed				
Existing	3.888	(27.7)	3.875	(27.7)
NSPS	9.313	(55.7)	9.310	(55.4)
ANSPS	19.627	(54.5)	27.713	(50.0)
Total Capacity Scrubbed				
Existing	3.888	(27.7)	3.875	(27.7)
NSPS	9.313	(55.7)	9.310	(55.4)
ANSPS	19.754	(54.7)	30.032	(52.9)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL

DRY SCRUBBING

(GW)

	1990		1995	
	GW	(%)	GW	(%)
Pacific				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	2.243	(40.3)	8.798	(33.4)
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	2.243	(40.3)	8.798	(33.4)
Rest of West				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	0.137	(90.0)	2.319	(90.0)
Capacity Partially Scrubbed				
Existing	3.888	(27.7)	3.875	(27.8)
NSPS	9.313	(55.7)	9.310	(55.4)
ANSPS	21.870	(53.0)	36.511	(46.0)
Total Capacity Scrubbed				
Existing	3.888	(27.7)	3.875	(27.8)
NSPS	9.313	(55.7)	9.310	(55.4)
ANSPS	22.007	(53.3)	38.830	(48.6)
National				
Capacity Fully Scrubbed				
Existing	1.901	(90.0)	1.901	(90.0)
NSPS	-	-	-	-
ANSPS	43.428	(90.0)	77.526	(90.0)
Capacity Partially Scrubbed				
Existing	50.499	(56.3)	49.406	(56.8)
NSPS	33.186	(51.8)	35.189	(53.0)
ANSPS	80.015	(58.9)	181.286	(55.5)
Total Capacity Scrubbed				
Existing	52.400	(57.5)	51.307	(58.0)
NSPS	33.186	(51.8)	35.189	(53.0)
ANSPS	123.443	(67.9)	258.814	(64.3)

SLUDGE GENERATED
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^3 tons)

	1990	1995
New England	896.3	886.3
Middle Atlantic	2,744.4	3,310.5
South Atlantic	7,930.8	11,955.2
EAST	11,517.5	16,152.0
EAST NORTH CENTRAL	3,353.5	5,545.6
EAST SOUTH CENTRAL	5,838.6	9,515.1
WEST NORTH CENTRAL	419.8	786.2
WEST SOUTH CENTRAL	3,649.0	4,496.7
Mountain	1,640.5	2,027.5
Pacific	74.5	182.4
WEST	1,714.0	2,209.9
TOTAL	26,547.3	38,705.5

UTILITY CAPITAL COSTS*
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
DRY SCRUBBING
(10^9 $'s)
(using 1978 dollars)

	1990	1995
National		
New Generation Capacity	299.1	466.3
Nuclear (GW)	140.2 (128.2)	211.3 (192.8)
Coal (GW)	143.5 (203.9)	238.0 (339.3)
NSPS	57.4 (80.5)	57.4 (80.5)
ANSPS	86.1 (123.4)	180.7 (258.8)
Oil/Gas	15.4 (44.6)	17.0 (49.2)
Combined Cycle (GW)	1.8 (3.9)	2.2 (4.8)
Turbine (GW)	13.6 (40.7)	14.8 (44.4)
Long Distance Transmission	6.5	6.7
Local Transmission and Distribution	179.2	269.8
Scrubbers (GW)	15.3 (156.6)	24.2 (339.6)
NSPS	1.8 (33.2)	1.8 (35.2)
ANSPS	9.6 (123.4)	18.5 (258.8)
Retrofit	3.8 (46.7)	3.8 (45.6)
Conversion to Western Coal	0.2	0.2
Total	500.2	767.2
Average Plant Cost		
Nuclear	1,093.6	1,096.0
Coal		
NSPS	712.7	712.7
ANSPS	697.5	698.1
Total	703.5	701.6
Oil/Gas		
Combined Cycle	456.4	458.0
Turbines	333.8	334.0
Total	344.5	346.2
Average Scrubber Cost		
NSPS	55.1	52.0
ANSPS	77.7	71.5
Retrofit	82.2	84.1
Total	75.0	71.2

(GW) -- Gigawatts.

* Gigawatts figures represent capacity built after 1975 rather than total.

CHANGE IN INCREMENTAL ANNUALIZED COST OF ELECTRICITY*
UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU FLOOR; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM REMOVAL
DRY SCRUBBING

(Percentage Change in Rates from Current Standard)
(10^6 $'s)
(1978 $'s)

	1990		1995	
New England	6.0	(0.12)	28.3	(0.48)
Middle Atlantic	(1.8)	(0.67)	(258.5)	(0.79)
South Atlantic	518.6	(1.26)	1,138.0	(2.15)
EAST	522.8		907.8	
EAST NORTH CENTRAL	388.1	(0.93)	703.1	(1.46)
EAST SOUTH CENTRAL	73.9	(1.41)	419.1	(2.08)
WEST NORTH CENTRAL	(116.9)	(0.88)	(112.2)	(1.79)
WEST SOUTH CENTRAL	283.1	(1.54)	660.6	(2.66)
Mountain	197.4	(2.63)	256.5	(2.71)
Pacific	80.7	(0.58)	164.9	(1.01)
WEST	278.1		421.4	
Total Annualized Cost	1,429.2	(1.05)	3,000.1	(1.72)
Present Value of Change in Annualized Cost	16,362.9		30,445.3	
Objective Function	1,332.7		2,849.7	
Present Value of Change in Objective Function	15,298.9		28,897.9	

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* Individual regional estimates can be distorted by changes in transmission between regions, causing anomalies such that costs or emissions decrease in one region while they increase in all others.

CHANGE IN SO_2 EMISSIONS RELATIVE TO CURRENT* STANDARD UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU FLOOR; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM REMOVAL

DRY SCRUBBING

(10^3 tons)

	1990	1995
New England	-	14.7
Middle Atlantic	168.9	316.3
South Atlantic	283.0	617.4
EAST	451.9	948.4
EAST NORTH CENTRAL	69.6	171.1
EAST SOUTH CENTRAL	216.0	398.8
WEST NORTH CENTRAL	(53.8)	130.1
WEST SOUTH CENTRAL	427.1	824.7
Mountain	222.6	329.2
Pacific	39.1	163.2
WEST	261.7	492.4
TOTAL	1,373.3	2,965.5

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* Individual regional estimates can be distorted by changes in transmission between regions, causing anomalies such that costs or emissions decrease in one region while they increase in all others.

CHANGE IN ANNUALIZED COSTS PER TON REMOVED UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU FLOOR; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM REMOVAL
DRY SCRUBBING
($/ton)

	1990	1995
EAST	1,156.9	957.2
CENTRAL	953.4	1,095.7
WEST	1,062.7	855.8
TOTAL	1,040.7	1,011.7

Change in costs between current NSPS (i.e., 1.2 pounds) and ANSPS divided by change in emissions.

COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

(10^6 tons)

Sector	1990	1995
Electric Utility	932.1	1,171.3
Scrubbed	445.6	707.6
Not Scrubbed	486.5	463.7
Industrial	278.0	320.8
Metallurgical	100.0	104.1
Residential/Commercial	0.7	0.4
Synthetics	56.2	88.7
Export	76.9	80.5
Total	1,443.8	1,765.8

1990 COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	253.3	430.5	248.2	932.1
Scrubbed	-	88.0	212.5	145.4	445.6
Not Scrubbed	-	165.3	218.3	102.9	486.5
Industrial	-	183.4	3.9	90.7	278.0
Metallurgical	68.7	-	31.2	-	100.0
Residential/Commercial	-	0.2	0.5	-	0.7
Synthetics	-	2.6	34.4	19.1	56.2
Export	60.9	2.8	3.9	9.3	76.9
Total	129.6	442.4	504.5	367.3	1,443.8

1995 COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	361.4	514.4	295.5	1,117.1
Scrubbed	-	201.9	310.0	195.7	707.6
Not Scrubbed	-	159.5	204.4	99.8	463.7
Industrial	-	214.0	3.7	103.1	320.8
Metallurgical	71.5	-	32.6	-	104.1
Residential/Commercial	-	0.1	0.3	-	0.4
Synthetics	-	5.3	36.8	46.7	88.7
Export	63.9	2.9	4.1	9.7	80.5
Total	135.4	583.7	591.9	454.9	1,765.8

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

(10^3 tons)

	1975	1990	1995
New England			
Coal Plants			
Existing	48.4	139.8	108.1
NSPS	-	-	-
ANSPS	-	-	17.2
Oil/Gas Plants	101.8	108.7	51.6
Total	150.2	248.5	176.9
Middle Atlantic			
Coal Plants			
Existing	1,835.9	1,471.1	1,464.1
NSPS	-	104.8	102.1
ANSPS	-	153.5	267.5
Oil/Gas Plants	371.1	325.2	300.2
Total	2,207.6	2,054.5	2,133.9
South Atlantic			
Coal Plants			
Existing	2,632.2	3,072.3	3,015.4
NSPS	-	159.8	169.6
ANSPS	-	449.7	893.9
Oil/Gas Plants	746.1	497.7	303.6
Total	3,378.3	4,179.5	4,382.5
East			
Coal Plants			
Existing	4,516.5	4,683.2	4,587.6
NSPS	-	264.6	271.7
ANSPS	-	603.2	1,178.6
Oil/Gas Plants	1,219.6	931.6	655.4
Total	5,136.1	6,482.5	6,693.3
EAST NORTH CENTRAL			
Coal Plants			
Existing	6,771.8	4,994.4	4,736.1
NSPS	-	319.8	326.6
ANSPS	-	120.6	333.6
Oil/Gas Plants	103.4	123.7	85.5
Total	6,885.2	5,558.5	5,481.7

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

(10^3 tons)

	1975	1990	1995
EAST SOUTH CENTRAL			
Coal Plants			
Existing	3,351.5	2,330.5	2,210.6
NSPS	-	203.2	204.1
ANSPS	-	400.6	654.6
Oil/Gas Plants	43.2	81.7	63.1
Total	3,394.7	3,016.0	3,132.4
WEST NORTH CENTRAL			
Coal Plants			
Existing	1,491.5	1,824.7	1,748.4
NSPS	-	408.2	411.5
ANSPS	-	98.6	219.8
Oil/Gas Plants	41.4	42.4	36.2
Total	1,532.9	2,373.9	2,415.9
WEST SOUTH CENTRAL			
Coal Plants			
Existing	203.7	150.0	150.0
NSPS	-	696.4	696.4
ANSPS	-	349.1	677.3
Oil/Gas Plants	209.0	545.7	305.3
Total	412.7	1,741.1	1,828.9
Mountain			
Coal Plants			
Existing	322.9	345.3	337.4
NSPS	-	173.7	172.0
ANSPS	-	259.0	397.3
Oil/Gas Plants	25.2	24.8	22.5
Total	358.1	802.8	929.2
Pacific			
Coal Plants			
Existing	47.6	78.0	35.7
NSPS	-	17.5	17.5
ANSPS	-	35.4	140.2
Oil/Gas Plants	148.1	100.8	106.8
Total	195.7	231.8	300.2

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^3 tons)

	1975	1990	1995
REST OF WEST			
Coal Plants			
Existing	380.5	423.3	373.1
NSPS	-	191.2	189.5
ANSPS	-	294.4	537.5
Oil/Gas Plants	173.3	125.6	129.3
Total	553.8	1,034.6	1,229.4
NATIONAL			
Coal Plants			
Existing	16,915.4	14,406.1	13,805.8
NSPS	-	2,083.5	2,099.8
ANSPS	-	1,866.4	3,601.3
Oil/Gas Plants	1,789.9	1,850.6	1,274.7
Total	18,705.3	20,206.6	20,781.6

Source for 1975 data: EPA National Emissions Data System, Computer Printout, May 1, 1978.

ANNUAL NATIONAL NO_x AND PARTICULATE EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^3 tons)

	NO_x		TSP	
	1990	1995	1990	1995
NATIONAL				
Oil/Gas	1,302.7	948.2	161.2	113.2
Coal	7,003.2	8,379.5	784.8	839.2
Existing	3,852.5	3,588.5	507.2	473.9
NSPS	1,328.7	1,337.1	186.9	188.0
ANSPS	1,822.0	3,453.8	90.7	177.3
Total	8,323.9	9,327.6	946.0	952.0

NATIONAL UTILITY FUEL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

(quadrillion Btu)

	1975	1990	1995
NATIONAL			
Coal	9.3	19.9	25.1
Existing	9.3	10.1	9.5
NSPS	-	3.7	3.8
ANSPS	-	6.0	11.8
Oil/Gas	6.2	4.3	3.2
Nuclear	1.7	9.7	13.5
Hydro and Other	2.0	3.4	3.4
Total	19.2	37.3	45.1
Percent of Total			
Coal	48.4	53.4	55.7
Oil/Gas	32.3	11.5	7.1
Nuclear	8.9	26.0	29.9
Hydro and Other	10.4	9.1	7.5

UTILITY OIL/GAS CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England	0.425	0.241	0.124
Middle Atlantic	0.824	0.804	0.712
South Atlantic	1.010	0.837	0.527
EAST	2.259	1.882	1.363
EAST NORTH CENTRAL	0.317	0.412	0.293
EAST SOUTH CENTRAL	0.112	0.180	0.152
WEST NORTH CENTRAL	0.289	0.131	0.131
WEST SOUTH CENTRAL	2.162	1.185	0.672
Mountain	0.249	0.098	0.096
Pacific	0.787	0.446	0.474
WEST	1.036	0.544	0.570
TOTAL	6.175	4.333	3.181
Oil for Coal Transportation		0.281	0.364
TOTAL		4.614	3.545

UTILITY COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England			
High Sulfur		0.198	0.147
Medium Sulfur		0.005	0.053
Low Sulfur		-	-
Total	0.047	0.203	0.200
Middle Atlantic			
High Sulfur		0.133	0.010
Medium Sulfur		1.645	1.833
Low Sulfur		0.018	0.279
Total	1.076	1.796	2.122
South Atlantic			
High Sulfur		1.466	1.946
Medium Sulfur		2.197	3.127
Low Sulfur		0.280	0.205
Total	1.789	3.944	5.278
EAST			
High Sulfur		1.796	2.371
Medium Sulfur		3.847	5.013
Low Sulfur		0.298	0.216
Total	2.912	5.942	7.600
EAST NORTH CENTRAL			
High Sulfur		1.638	2.000
Medium Sulfur		1.671	1.740
Low Sulfur		0.844	0.843
Total	2.670	4.152	4.583
EAST SOUTH CENTRAL			
High Sulfur		1.856	2.129
Medium Sulfur		0.679	1.074
Low Sulfur		0.301	0.272
Total	1.328	2.836	3.476
WEST NORTH CENTRAL			
High Sulfur		0.420	0.396
Medium Sulfur		0.683	0.649
Low Sulfur		0.835	1.262
Total	0.783	1.938	2.307

UTILITY COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
WEST SOUTH CENTRAL			
High Sulfur		0.014	0.004
Medium Sulfur		1.294	1.315
Low Sulfur		1.272	2.480
Total	0.119	2.579	3.799
Mountain			
High Sulfur		-	-
Medium Sulfur		1.005	1.373
Low Sulfur		1.239	1.341
Total	0.615	2.244	2.714
Pacific			
High Sulfur		-	-
Medium Sulfur		0.079	0.031
Low Sulfur		0.160	0.548
Total	0.069	0.239	0.579
REST OF WEST			
High Sulfur		-	-
Medium Sulfur		1.084	1.404
Low Sulfur		1.399	1.889
Total	0.685	2.483	3.293
NATIONAL			
High Sulfur		5.724	6.899
Medium Sulfur		9.257	11.196
Low Sulfur		4.949	6.963
Total	8.719	19.930	25.058

1995 ANSPS COAL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Maine/Vt./New Hampshire				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Mass./Conn./Rhode Island				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	1.315	BF	0.044	Ohio
ANSPS (Full)	0.409	BG	0.014	Ohio
ANSPS (No Scrub)	-	--	-	-
Total	1.724		0.058	
Pennsylvania, West				
ANSPS (Full)	4.448	BF	0.146	Northern West Virginia
ANSPS (Full)	3.310	BG	0.192	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	7.758		0.338	
Pennsylvania, East/N.J./N.Y.DS				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	6.718	BF	0.279	Pennsylvania
ANSPS (No Scrub)	-	--	-	-
Total	6.718		0.279	
New York, Upstate				
ANSPS (Full)	7.002	BF	0.287	Pennsylvania
ANSPS (Full)	0.070	BG	0.004	Pennsylvania
ANSPS (No Scrub)	-	--	-	-
Total	7.073		0.290	
Virginia/Md./Del.				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	7.769	BF	0.349	Pennsylvania
ANSPS (No Scrub)	-	--	-	-
Total	7.769		0.349	
West Virginia				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	

1995 ANSPS COAL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
North & South Carolina				
ANSPS (Part)	0.060	BA	0.002	Virginia
ANSPS (Full)	12.401	BG	0.419	West Kentucky
ANSPS (No Scrub)	-	--	-	-
Total	12.461		0.421	
Georgia/North Florida				
ANSPS (Part)	0.982	BD	0.029	Illinois
ANSPS (Full)	5.977	BF	0.181	Illinois
ANSPS (Full)	12.104	BG	0.701	Illinois
Total	19.064		0.912	
South Florida				
ANSPS (Full)	14.884	BF	0.683	Pennsylvania
ANSPS (Full)	5.681	BG	0.329	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	20.625		1.012	
Ohio, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Ohio, Central				
ANSPS (Full)	0.063	BF	0.002	Illinois
ANSPS (Full)	7.174	BG	0.360	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	7.236		0.362	
Ohio, South				
ANSPS (Full)	4.375	BF	0.158	Northern West Virginia
ANSPS (Full)	0.723	BG	0.042	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	5.098		0.200	
Michigan				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	6.554	BG	0.290	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	6.554		0.290	

1995 ANSPS COAL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL

WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Illinois				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Indiana				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Wisconsin				
ANSPS (Part)	1.617	SA	0.057	West Montana
ANSPS (Full)	0.686	BG	0.024	Illinois
ANSPS (No Scrub)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	2.302		0.080	
Kentucky, East				
ANSPS (Part)	1.862	BD	0.056	Indiana
ANSPS (Full)	1.798	BG	0.104	Indiana
ANSPS (No Scrub)	-	--	-	-
Total	3.660		0.160	
Kentucky, West				
ANSPS (Part)	4.137	BD	0.120	Indiana
ANSPS (Full)	9.746	BG	0.530	Indiana & Illinois
ANSPS (No Scrub)	-		-	-
Total	13.883		0.650	
Tennessee, East				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.527	BG	0.018	Indiana
ANSPS (No Scrub)	-	--	-	-
Total	0.527		0.018	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Tennessee, West				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	9.542	BG	0.462	Illinois
ANSPS (Full)	4.649	SF	0.265	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	14.190		0.727	
Alabama/Mississippi				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	6.218	BG	0.277	West Kentucky
ANSPS (No Scrub)	-	--	-	-
Total	6.218		0.277	
North & South Dakota/Minnesota				
ANSPS (Part)	1.815	SA	0.059	West Montana
ANSPS (Part)	2.758	LA	0.108	North Dakota
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	4.573		0.167	
Kansas/Nebraska				
ANSPS (Part)	1.700	BA	0.052	South Colorado
ANSPS (Part)	0.487	BB	0.015	Wyoming
ANSPS (Part)	0.163	BD	0.005	Wyoming
ANSPS (Part)	2.301	SA	0.109	West Montana
Total	4.651		0.181	
Iowa				
ANSPS (Part)	0.059	BA	0.002	South Colorado
ANSPS (Part)	0.018	BD	0.001	Wyoming
ANSPS (Part)	6.435	SA	0.341	West Montana
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	6.513		0.344	
Missouri				
ANSPS (Part)	1.335	BA	0.042	South Colorado
ANSPS (Part)	0.321	BD	0.010	Wyoming
ANSPS (Part)	1.284	SA	0.071	West Montana
Total	2.939		0.123	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Arkansas/Oklahoma/Louisiana				
ANSPS (Full)	0.044	BF	0.001	Oklahoma
ANSPS (Full)	0.071	BG	0.004	Kansas
ANSPS (Part)	4.762	BB	0.149	Utah
ANSPS (Part)	1.274	BD	0.040	Wyoming
ANSPS (Part)	11.938	SA	0.606	West Montana
Total	18.090		0.800	
Texas				
ANSPS (Part)	19.233	BA	0.595	South Colorado
ANSPS (Part)	4.455	BB	0.237	South Colorado
ANSPS (Part)	6.251	BD	0.335	New Mexico
ANSPS (Part)	0.472	SA	0.026	West Montana
ANSPS (Full)	8.806	LF	0.513	Texas
Total	39.217		1.706	
Idaho				
ANSPS (Part)	3.914	SA	0.197	Wyoming
ANSPS (Full)	2.603	SF	0.158	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	6.518		0.356	
Montana				
ANSPS (Part)	5.181	SA	0.306	West Montana
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	5.181		0.306	
Wyoming				
ANSPS (Part)	0.210	SA	0.008	West Montana
ANSPS (Full)	0.155	SD	0.009	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	0.365		0.017	
Utah				
ANSPS (Part)	1.298	BB	0.053	Utah
ANSPS (Part)	0.126	SA	0.007	West Montana
ANSPS (Full)	-	--	-	-
Total	1.424		0.061	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Nevada				
ANSPS (Part)	1.114	BB	0.060	Utah
ANSPS (Part)	0.470	SA	0.028	West Montana
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	1.584		0.088	
Colorado				
ANSPS (Part)	2.150	BA	0.074	South & North Colorado
ANSPS (Full)	5.176	SF	0.314	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	7.326		0.388	
Arizona				
ANSPS (Part)	0.470	BA	0.014	New Mexico
ANSPS (Part)	3.900	BD	0.209	New Mexico
ANSPS (No Scrub)	-	--	-	-
Total	4.370		0.223	
New Mexico				
ANSPS (Part)	2.195	BD	0.119	New Mexico
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	2.195		0.119	
Washington/Oregon				
ANSPS (Part)	0.005	BD	0.000	Wyoming
ANSPS (Part)	8.792	SA	0.519	West Montana
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	8.798		0.519	
California, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
California, South				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	

AGGREGATED REGIONAL COAL PRODUCTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL

WET SCRUBBING

(10^6 tons)

	1975	1990	1995
Northern Appalachia	158.2	211.7	291.5
Central Appalachia	211.1	182.3	172.5
Southern Appalachia	22.9	12.9	11.2
APPALACHIA	392.1	407.0	475.2
MIDWEST	138.6	382.9	456.0
Eastern Northern Great Plains	8.5	30.0	33.0
Western Northern Great Plains	45.2	423.5	588.9
NORTHERN GREAT PLAINS	53.7	453.5	621.8
Central West	9.5	4.6	8.3
Gulf	10.0	71.8	61.8
Rockies	14.0	66.7	93.6
Southwest	15.7	50.6	46.0
Northwest	4.5	5.6	1.9
REST OF WEST	50.0	199.2	211.6
TOTAL	634.6	1,442.6	1,764.6

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia			
Metallurgical	13.5	17.9	19.7
High Sulfur	107.1	73.7	96.1
Medium Sulfur	37.4	119.8	175.3
Low Sulfur	0.2	0.4	0.4
Total	158.1	211.7	291.5
Central Appalachia			
Metallurgical	83.0	126.4	130.8
High Sulfur	23.6	4.2	0.1
Medium Sulfur	91.9	33.4	23.4
Low Sulfur	12.6	18.4	18.3
Total	211.1	182.3	172.5
Southern Appalachia			
Metallurgical	1.7	4.5	5.4
High Sulfur	-	-	-
Medium Sulfur	21.2	4.3	0.6
Low Sulfur	-	4.2	5.2
Total	22.9	12.9	11.2
APPALACHIA			
Metallurgical	98.2	148.8	155.9
High Sulfur	130.7	77.9	96.2
Medium Sulfur	150.5	157.4	199.3
Low Sulfur	12.8	22.9	23.9
Total	392.1	407.0	475.2
MIDWEST			
Metallurgical	-	-	-
High Sulfur	131.6	286.5	343.3
Medium Sulfur	7.1	95.5	111.3
Low Sulfur	-	1.0	1.4
Total	138.6	382.9	456.0
Eastern Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	0.3	0.3	10.3
Medium Sulfur	7.8	23.6	14.1
Low Sulfur	0.4	6.0	8.6
Total	8.6	30.0	33.0

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	1975	1990	1995
Western Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	7.6	107.6	167.4
Low Sulfur	37.6	315.8	421.5
Total	45.2	423.5	588.9
NORTHERN GREAT PLAINS			
Metallurgical	-	-	-
High Sulfur	0.3	0.4	10.3
Medium Sulfur	15.4	131.3	181.5
Low Sulfur	38.0	321.8	430.0
Total	53.8	453.5	621.8
Central West			
Metallurgical	0.3	0.1	0.1
High Sulfur	8.4	3.1	5.4
Medium Sulfur	0.8	0.9	1.9
Low Sulfur	-	0.5	1.0
Total	8.5	4.6	8.3
Gulf			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	10.0	71.8	61.8
Low Sulfur	-	-	-
Total	10.0	71.8	61.8
Rockies			
Metallurgical	2.9	5.5	4.6
High Sulfur	-	-	-
Medium Sulfur	0.8	7.1	9.2
Low Sulfur	10.4	54.1	79.9
Total	14.1	66.7	93.6
Southwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	15.2	16.0	0.9
Low Sulfur	0.5	34.6	45.1
Total	15.7	50.6	46.0

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR;
33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	1975	1990	1995
Northwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	3.7	5.6	1.9
Low Sulfur	0.8	-	-
Total	4.5	5.6	1.9
WEST			
Metallurgical	3.3	5.6	4.6
High Sulfur	8.4	3.1	5.4
Medium Sulfur	30.4	101.3	75.6
Low Sulfur	11.7	89.2	126.0
Total	53.7	199.2	211.6
TOTAL			
Metallurgical	101.7	154.4	160.5
High Sulfur	147.8	367.8	455.1
Medium Sulfur	197.0	485.4	567.7
Low Sulfur	62.5	434.9	581.3
Total	509.0	1,442.6	1,764.6

MINE-MOUTH PRICE
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING

($\$/10^6$ Btu)
(1978 $'s)

	1990	1995
Northern Appalachia		
High Sulfur	1.08	1.15
Medium Sulfur	1.17	1.23
Low Sulfur	1.55	1.61
Regional Average	1.18	1.23
Central Appalachia		
High Sulfur	1.15	1.25
Medium Sulfur	1.30	1.37
Low Sulfur	1.53	1.59
Regional Average	1.50	1.58
Southern Appalachia		
High Sulfur	--	--
Medium Sulfur	1.29	1.45
Low Sulfur	1.56	1.63
Regional Average	1.49	1.64
Midwest		
High Sulfur	1.04	1.15
Medium Sulfur	1.24	1.33
Low Sulfur	1.58	1.68
Regional Average	1.10	1.20
Eastern Northern Great Plains		
High Sulfur	0.42	0.42
Medium Sulfur	0.43	0.43
Low Sulfur	0.46	0.54
Regional Average	0.43	0.46
Western Northern Great Plains (Bituminous)		
High Sulfur	--	--
Medium Sulfur	0.88	0.98
Low Sulfur	1.02	1.12
Regional Average	0.96	1.07
Western Northern Great Plains (Subbituminous)		
High Sulfur	--	--
Medium Sulfur	0.41	0.39
Low Sulfur	0.52	0.53
Regional Average	0.49	0.49

MINE-MOUTH PRICE
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.50 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Central West		
High Sulfur	1.12	1.19
Medium Sulfur	1.27	1.34
Low Sulfur	1.43	1.54
Regional Average	1.20	1.28
Gulf		
High Sulfur	--	--
Medium Sulfur	0.72	1.18
Low Sulfur	--	--
Regional Average	0.72	1.18
Rocky Mountain		
High Sulfur	--	--
Medium Sulfur	0.94	1.06
Low Sulfur	1.03	1.18
Regional Average	1.06	1.19
Southwest		
High Sulfur	--	--
Medium Sulfur	0.68	0.86
Low Sulfur	0.67	0.84
Regional Average	0.68	0.84
Northwest		
High Sulfur	--	--
Medium Sulfur	0.87	0.90
Low Sulfur	--	--
Regional Average	0.87	0.90
National		
High Sulfur	1.05	1.14
Medium Sulfur	0.99	1.05
Low Sulfur	0.72	0.76
Regional Average	1.01	1.06

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Northeast		
High Sulfur	1.41	1.49
Medium Sulfur	1.96	1.62
Low Sulfur	--	--
Regional Average	1.42	1.53
Middle Atlantic		
High Sulfur	1.35	1.40
Medium Sulfur	1.49	1.55
Low Sulfur	1.82	1.86
Regional Average	1.48	1.53
South Atlantic		
High Sulfur	1.40	1.50
Medium Sulfur	1.64	1.67
Low Sulfur	1.89	1.90
Regional Average	1.57	1.61
East North Central		
High Sulfur	1.25	1.36
Medium Sulfur	1.46	1.53
Low Sulfur	1.69	1.75
Regional Average	1.42	1.49
East South Central		
High Sulfur	1.25	1.35
Medium Sulfur	1.47	1.45
Low Sulfur	1.70	1.81
Regional Average	1.35	1.42
West North Central		
High Sulfur	1.20	1.29
Medium Sulfur	1.04	1.06
Low Sulfur	1.20	1.22
Regional Average	1.14	1.19
West South Central		
High Sulfur	1.36	1.45
Medium Sulfur	0.96	1.33
Low Sulfur	1.43	1.52
Regional Average	1.19	1.45

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
($\$/10^6$ Btu)
(1978 $'s)

	1990	1995
Mountain		
High Sulfur	--	--
Medium Sulfur	0.76	0.83
Low Sulfur	0.92	0.96
Regional Average	0.85	0.90
Pacific		
High Sulfur	--	--
Medium Sulfur	1.01	1.07
Low Sulfur	1.08	1.11
Regional Average	1.06	1.11
National Total		
High Sulfur	1.29	1.39
Medium Sulfur	1.33	1.43
Low Sulfur	1.34	1.38
Regional Average	1.32	1.40

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

1990 NATIONAL COAL TRANSPORTATION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.6	101.9	68.0	29.8	-	-	-	-	-	211.3
Central Appalachia	-	19.4	96.1	60.4	5.8	0.7	-	-	-	182.4
Southern Appalachia	-	-	6.6	-	6.3	-	-	-	-	12.9
Midwest	-	-	62.0	165.8	133.0	22.2	-	-	-	383.0
Central West	-	-	-	-	1.0	1.4	1.8	-	0.3	4.5
Gulf	-	-	-	-	-	-	71.8	-	-	71.8
Eastern Northern Great Plains	-	-	-	-	-	29.9	-	0.1	-	30.0
Western Northern Great Plains	-	-	-	26.6	15.2	70.6	193.8	102.2	15.1	423.5
Rocky Mountains	-	-	-	17.3	-	5.6	17.4	17.7	8.6	66.6
Southwest	-	-	-	-	-	-	12.8	34.2	3.7	50.7
Northwest	-	-	-	-	-	-	-	-	5.6	5.6
Total	11.6	121.3	232.7	299.9	161.3	130.4	297.6	154.2	33.3	1,442.3

1995 NATIONAL COAL TRANSPORTATION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.8	118.2	108.3	52.5	-	-	-	-	-	290.8
Central Appalachia	-	20.1	84.0	63.5	4.2	0.7	-	-	-	172.5
Southern Appalachia	-	-	3.5	-	7.7	-	-	-	-	11.2
Midwest	-	-	95.7	177.0	162.2	21.1	-	-	-	456.0
Central West	-	-	-	-	1.0	3.6	3.6	-	0.1	8.3
Gulf	-	-	-	-	-	-	61.8	-	-	61.8
Eastern Northern Great Plains	-	-	-	-	-	32.9	-	0.1	-	33.0
Western Northern Great Plains	-	-	-	29.6	26.1	94.0	252.1	147.6	39.5	588.9
Rocky Mountains	-	-	-	11.6	-	4.4	48.0	17.2	12.5	93.7
Southwest	-	-	-	-	-	-	12.2	33.0	0.8	46.0
Northwest	-	-	-	-	-	-	-	-	1.9	1.9
Total	11.8	138.3	291.5	334.2	201.2	156.7	377.7	197.9	54.8	1,764.1

1990 INTER-REGIONAL ELECTRICITY TRANSMISSION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	Destination									
Origin	**New England**	**Middle Atlantic**	**South Atlantic**	**East North Central**	**East South Central**	**West North Central**	**West South Central**	**Mountain**	**Pacific**	**Total**
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	3.71	-	-	-	-	-	-	3.71
South Atlantic	-	5.40	-	-	-	-	-	-	-	5.40
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	1.99	-	-	-	-	-	-	1.99
West North Central	-	-	-	-	-	-	0.80	-	-	0.80
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	13.01	13.01
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	5.40	5.70	-	-	-	0.80	-	13.01	24.91

1995 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	3.70	-	-	-	-	-	-	3.70
South Atlantic	-	4.16	-	-	-	-	-	-	-	4.16
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	-	-	-	-	-	-	-	-
West North Central	-	-	-	2.29	-	-	-	-	-	2.29
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	12.68	12.68
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	4.16	3.70	2.29	-	-	-	-	12.68	22.83

NATIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW (percent capacity factor))

	1975	1990	1995
NATIONAL			
Nuclear	37.2	165.3 (66.9)	230.0 (66.9)
Coal	183.6	398.6 (57.8)	534.1 (54.4)
Existing*	183.6	197.9 (58.0)	197.9 (54.1)
NSPS	-	79.6 (55.5)	79.6 (55.9)
ANSPS	-	121.1 (59.0)	256.6 (54.0)
Oil/Gas	192.1	219.7 (19.2)	204.0 (14.7)
Steam*	147.3	141.0 (24.3)	120.2 (19.2)
Combined Cycle	2.7	6.6 (22.8)	7.5 (21.3)
Turbines	42.2	72.1 (9.0)	76.3 (7.0)
Hydro and Others	68.3	87.8 (44.0)	89.5 (43.5)
Total	481.2	871.4 (48.4)	1,057.5 (48.5)
Percent of Total			
Nuclear	7.7	19.0	21.7
Coal	38.2	45.7	50.5
Oil/Gas	39.9	25.2	19.2
Other	14.2	10.1	8.5

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* Powerplants under ESECA orders to convert from oil and/or gas to coal (14.3 GW) are assumed to convert by 1985.

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
New England		
Nuclear	10.1 (70.0)	14.0 (70.0)
Coal	4.0 (56.2)	5.7 (37.2)
Existing	4.0 (56.2)	4.0 (36.8)
NSPS	-	-
ANSPS	-	1.7 (38.0)
Oil/Gas	8.8 (28.5)	6.1 (20.9)
Steam	7.7 (30.7)	3.9 (27.4)
Combined Cycle	0.4 (30.6)	0.4 (30.6)
Turbines	0.8 (5.0)	1.8 (5.0)
Hydro and Others	2.9 (18.1)	2.9 (18.1)
Total	25.8 (47.8)	28.7 (47.8)
Percent of Total		
Nuclear	39.1	48.8
Coal	15.5	19.9
Oil/Gas	34.1	21.3
Other	11.2	10.1
Middle Atlantic		
Nuclear	26.2 (65.3)	36.4 (65.3)
Coal	35.1 (58.1)	44.8 (54.1)
Existing	20.1 (58.4)	20.1 (57.2)
NSPS	3.1 (70.0)	3.1 (68.0)
ANSPS	11.9 (54.6)	21.5 (49.2)
Oil/Gas	35.5 (22.2)	34.6 (20.1)
Steam	21.1 (31.0)	20.9 (29.3)
Combined Cycle	0.4 (29.2)	0.4 (29.2)
Turbines	14.0 (8.7)	13.3 (5.4)
Hydro and Others	8.0 (46.1)	9.0 (41.4)
Total	104.8 (46.8)	124.8 (47.0)
Percent of Total		
Nuclear	25.0	29.2
Coal	33.5	35.9
Oil/Gas	33.9	27.7
Other	7.6	7.2

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
South Atlantic		
Nuclear	32.2 (66.2)	44.7 (66.2)
Coal	80.7 (58.4)	115.2 (54.4)
Existing	47.0 (60.9)	47.0 (58.7)
NSPS	8.3 (37.6)	8.3 (40.3)
ANSPS	25.5 (60.6)	59.9 (52.9)
Oil/Gas	39.4 (21.0)	34.4 (35.6)
Steam	22.3 (28.8)	18.0 (20.9)
Combined Cycle	0.6 (35.9)	0.6 (25.0)
Turbines	16.4 (9.8)	15.7 (7.2)
Hydro and Others	10.4 (23.8)	10.5 (23.7)
Total	162.6 (48.7)	204.7 (48.7)
Percent of Total		
Nuclear	19.8	21.8
Coal	49.6	56.3
Oil/Gas	24.2	16.8
Other	6.4	5.1
East North Central		
Nuclear	33.0 (67.7)	45.9 (67.7)
Coal	85.1 (55.1)	98.6 (52.7)
Existing	62.9 (58.3)	62.9 (54.8)
NSPS	14.5 (43.8)	14.5 (45.6)
ANSPS	7.7 (50.6)	21.2 (51.4)
Oil/Gas	20.3 (18.4)	18.4 (14.0)
Steam	10.7 (25.6)	9.5 (18.6)
Combined Cycle	0.2 (19.1)	0.2 (12.1)
Turbines	9.4 (10.2)	8.6 (8.9)
Hydro and Others	1.7 (16.9)	1.7 (16.9)
Total	140.1 (52.3)	164.5 (52.2)
Percent of Total		
Nuclear	23.6	27.9
Coal	60.7	59.8
Oil/Gas	14.5	11.2
Other	1.2	1.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
East South Central		
Nuclear	23.0 (67.4)	32.0 (67.4)
Coal	60.3 (55.0)	77.1 (52.6)
Existing	30.2 (54.9)	30.2 (49.4)
NSPS	8.4 (48.3)	8.4 (48.6)
ANSPS	21.7 (57.8)	38.5 (56.0)
Oil/Gas	14.4 (11.3)	15.4 (8.4)
Steam	3.0 (18.7)	3.0 (12.1)
Combined Cycle	-	-
Turbines	11.4 (9.1)	12.4 (7.5)
Hydro and Others	6.7 (41.6)	6.8 (40.9)
Total	104.4 (50.9)	131.3 (50.4)
Percent of Total		
Nuclear	22.0	24.4
Coal	57.8	58.7
Oil/Gas	13.8	11.7
Other	6.4	5.2
West North Central		
Nuclear	9.1 (65.0)	12.6 (65.0)
Coal	41.8 (52.0)	51.1 (51.0)
Existing	18.4 (51.3)	18.4 (45.9)
NSPS	14.0 (58.3)	14.0 (59.0)
ANSPS	9.4 (44.3)	18.7 (50.2)
Oil/Gas	13.3 (8.1)	15.3 (7.0)
Steam	4.3 (10.4)	4.3 (6.9)
Combined Cycle	0.9 (8.0)	0.9 (8.0)
Turbines	8.9 (7.0)	11.0 (7.0)
Hydro and Others	4.1 (41.2)	4.1 (41.2)
Total	68.2 (44.6)	83.1 (44.6)
Percent of Total		
Nuclear	13.3	15.2
Coal	61.3	61.5
Oil/Gas	19.5	18.4
Other	6.0	4.9

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL

WET SCRUBBING

(GW (percent capacity factor))

	1990	1995
West South Central		
Nuclear	13.1 (65.0)	18.2 (65.0)
Coal	46.4 (64.8)	80.5 (54.9)
Existing	2.2 (64.4)	2.2 (64.4)
NSPS	20.9 (65.0)	20.9 (65.0)
ANSPS	23.2 (64.7)	57.3 (50.9)
Oil/Gas	59.3 (19.7)	47.6 (12.5)
Steam	55.7 (20.4)	44.0 (12.9)
Combined Cycle	1.4 (12.9)	1.4 (10.4)
Turbines	2.2 (6.0)	2.2 (6.0)
Hydro and Others	2.5 (19.5)	2.5 (19.5)
Total	121.3 (41.8)	148.8 (42.0)
Percent of Total		
Nuclear	10.8	12.2
Coal	38.3	54.1
Oil/Gas	48.9	32.0
Other	2.1	1.7
Mountain		
Nuclear	4.3 (65.4)	5.9 (65.4)
Coal	41.2 (63.2)	50.8 (62.0)
Existing	11.8 (62.2)	11.8 (58.3)
NSPS	10.0 (64.5)	10.0 (62.3)
ANSPS	19.4 (63.2)	29.0 (63.4)
Oil/Gas	6.8 (13.2)	7.6 (11.3)
Steam	2.6 (17.7)	2.7 (13.7)
Combined Cycle	0.5 (17.3)	0.5 (13.7)
Turbines	3.6 (9.4)	4.4 (9.5)
Hydro and Others	9.2 (45.9)	9.6 (45.5)
Total	61.4 (55.3)	73.9 (54.9)
Percent of Total		
Nuclear	7.0	8.0
Coal	67.1	68.7
Oil/Gas	11.1	10.3
Other	15.0	13.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
Pacific		
Nuclear	14.4 (70.0)	20.1 (70.0)
Coal	4.0 (69.9)	10.6 (64.5)
Existing	1.3 (69.6)	1.3 (25.0)
NSPS	0.5 (70.0)	0.5 (70.0)
ANSPS	2.2 (70.0)	8.8 (70.0)
Oil/Gas	22.0 (21.1)	24.7 (20.3)
Steam	13.6 (25.2)	13.9 (26.1)
Combined Cycle	3.0 (24.3)	3.9 (24.6)
Turbines	5.4 (9.2)	6.9 (6.0)
Hydro and Others	42.4 (53.1)	42.4 (53.1)
Total	82.8 (48.4)	97.8 (49.5)
Percent of Total		
Nuclear	17.4	20.6
Coal	4.8	10.8
Oil/Gas	26.6	25.3
Other	51.2	43.4
National		
Nuclear	165.3 (66.9)	230.0 (66.9)
Coal	398.6 (57.8)	534.1 (54.4)
Existing*	197.9 (58.0)	197.9 (54.1)
NSPS	79.6 (55.5)	79.6 (55.9)
ANSPS	121.1 (59.0)	256.6 (54.0)
Oil/Gas	219.7 (19.2)	204.0 (14.7)
Steam*	141.0 (24.3)	120.2 (19.2)
Combined Cycle	6.6 (22.8)	7.5 (21.3)
Turbines	72.1 (9.0)	76.3 (7.0)
Hydro and Others	87.8 (44.0)	89.5 (43.5)
Total	871.4 (48.4)	1,057.5 (48.5)
Percent of Total		
Nuclear	19.0	21.7
Coal	45.7	50.5
Oil/Gas	25.2	19.2
Other	10.1	8.5

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
New England				
Capacity Full Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	1.724	(90.0)
Capacity Partially Scrubbed				
Existing	3.315	(79.8)	3.315	(79.8)
NSPS	-	-	-	-
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	3.315	(79.8)	3.315	(79.8)
NSPS	-	-	-	-
ANSPS	-	-	1.724	(90.0)
Middle Atlantic				
Capacity Fully Scrubbed				
Existing	2.245	(90.0)	2.245	(90.0)
NSPS	-	-	-	-
ANSPS	11.843	(90.0)	21.549	(90.0)
Capacity Partially Scrubbed				
Existing	3.147	(64.1)	3.141	(64.4)
NSPS	2.810	(64.1)	2.808	(64.1)
ANSPS	0.097	(32.5)	-	-
Total Capacity Scrubbed				
Existing	5.392	(74.9)	5.486	(75.3)
NSPS	2.810	(64.1)	2.808	(64.1)
ANSPS	11.940	(83.4)	21.549	(90.0)
South Atlantic				
Capacity Fully Scrubbed				
Existing	2.555	(90.0)	2.555	(90.0)
NSPS	-	-	-	-
ANSPS	22.559	(90.0)	58.877	(90.0)
Capacity Partially Scrubbed				
Existing	3.716	(58.9)	3.902	(52.7)
NSPS	2.056	(66.7)	2.126	(64.1)
ANSPS	2.929	(32.5)	1.042	(65.5)
Total Capacity Scrubbed				
Existing	6.271	(71.6)	6.457	(67.5)
NSPS	2.056	(66.7)	2.126	(64.1)
ANSPS	25.488	(78.5)	59.919	(83.9)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL

WET SCRUBBING

(GW)

	1990		1995	
	GW	(%)	GW	(%)
East				
Capacity Fully Scrubbed				
Existing	4.800	(90.0)	4.800	(90.0)
NSPS	-	-	-	-
ANSPS	34.402	(90.0)	82.150	(90.0)
Capacity Partially Scrubbed				
Existing	10.178	(67.3)	10.358	(64.9)
NSPS	4.866	(65.2)	4.934	(64.1)
ANSPS	3.026	(32.5)	1.042	(65.5)
Total Capacity Scrubbed				
Existing	14.978	(74.6)	15.158	(72.9)
NSPS	4.866	(65.2)	4.934	(64.1)
ANSPS	37.428	(85.4)	83.192	(89.7)
East North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	7.736	(90.0)	19.573	(90.0)
Capacity Partially Scrubbed				
Existing	7.230	(73.6)	7.281	(73.1)
NSPS	2.801	(49.5)	2.977	(45.4)
ANSPS	-	-	1.617	(32.5)
Total Capacity Scrubbed				
Existing	7.230	(73.6)	7.281	(73.1)
NSPS	2.801	(49.5)	2.977	(45.4)
ANSPS	7.736	(90.0)	21.190	(80.5)
East South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	19.800	(90.0)	32.479	(90.0)
Capacity Partially Scrubbed				
Existing	4.843	(76.0)	4.839	(76.0)
NSPS	2.980	(64.6)	3.070	(62.4)
ANSPS	1.871	(66.6)	5.999	(67.5)
Total Capacity Scrubbed				
Existing	4.843	(76.0)	4.839	(76.0)
NSPS	2.980	(64.6)	3.070	(62.4)
ANSPS	21.671	(83.1)	38.478	(81.8)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
West North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	9.442	(32.5)	18.676	(34.0)
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	9.442	(32.5)	18.676	(34.0)
West South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	9.110	(90.0)	9.109	(90.0)
Capacity Partially Scrubbed				
Existing	1.110	(64.1)	1.109	(64.1)
NSPS	5.095	(64.1)	5.094	(64.1)
ANSPS	14.098	(52.4)	48.206	(48.0)
Total Capacity Scrubbed				
Existing	1.110	(64.1)	1.109	(64.1)
NSPS	5.095	(64.1)	5.094	(64.1)
ANSPS	23.208	(64.7)	57.307	(48.7)
Mountain				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	1.504	(90.0)	7.934	(90.0)
Capacity Partially Scrubbed				
Existing	1.994	(27.7)	1.992	(27.7)
NSPS	9.313	(60.9)	9.311	(60.9)
ANSPS	17.883	(49.9)	21.029	(47.5)
Total Capacity Scrubbed				
Existing	1.994	(27.7)	1.992	(27.7)
NSPS	9.313	(60.9)	9.311	(60.9)
ANSPS	19.387	(52.7)	28.963	(57.7)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL

WET SCRUBBING

(GW)

	1990		1995	
	GW	(%)	GW	(%)
Pacific				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	2.221	(32.5)	8.798	(32.5)
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	2.221	(32.5)	8.798	(32.5)
Rest of West				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	1.504	(90.0)	7.934	(90.0)
Capacity Partially Scrubbed				
Existing	1.994	(27.7)	1.992	(27.7)
NSPS	9.313	(60.8)	9.311	(60.9)
ANSPS	20.140	(48.0)	29.827	(43.1)
Total Capacity Scrubbed				
Existing	1.994	(27.7)	1.992	(27.7)
NSPS	9.313	(60.9)	9.311	(60.9)
ANSPS	21.608	(50.9)	37.761	(52.9)
National				
Capacity Fully Scrubbed				
Existing	4.800	(90.0)	4.800	(90.0)
NSPS	-	-	-	-
ANSPS	74.552	(90.0)	151.237	(90.0)
Capacity Partially Scrubbed				
Existing	25.355	(67.6)	25.579	(66.4)
NSPS	30.058	(55.9)	30.389	(55.2)
ANSPS	46.093	(46.0)	105.367	(42.4)
Total Capacity Scrubbed				
Existing	30.155	(71.2)	30.379	(70.1)
NSPS	30.058	(55.9)	30.389	(55.2)
ANSPS	121.093	(68.9)	256.604	(67.1)

SLUDGE GENERATED UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL WET SCRUBBING

(10^3 tons)

	1990	1995
New England	897.3	807.9
Middle Atlantic	3,390.4	4,819.8
South Atlantic	6,987.5	12,903.7
EAST	11,275.2	18,531.4
EAST NORTH CENTRAL	4,073.3	6,553.7
EAST SOUTH CENTRAL	6,988.1	9,722.5
WEST NORTH CENTRAL	340.9	512.1
WEST SOUTH CENTRAL	3,529.6	4,023.6
Mountain	1,805.6	3,192.9
Pacific	42.6	169.1
WEST	1,848.2	3,362.0
TOTAL	28,055.3	42,705.3

UTILITY CAPITAL COSTS*
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM PERCENTAGE REMOVAL
WET SCRUBBING

(10^9 $'s)
(using 1978 dollars)

	1990	1995
National		
New Generation Capacity	298.5	466.8
Nuclear (GW)	140.2 (128.2)	211.3 (192.8)
Coal (GW)	141.9 (200.6)	237.6 (336.2)
NSPS	56.7 (79.6)	56.7 (79.6)
ANSPS	85.2 (121.1)	180.9 (256.6)
Oil/Gas	16.4 (47.4)	17.9 (51.7)
Combined Cycle (GW)	1.8 (3.9)	2.2 (4.8)
Turbine (GW)	14.6 (43.5)	15.7 (46.9)
Long Distance Transmission	6.8	7.0
Local Transmission and Distribution	179.2	269.7
Scrubbers (GW)	20.6 (175.6)	35.5 (311.7)
NSPS	3.0 (30.1)	3.0 (30.4)
ANSPS	14.0 (121.1)	28.9 (256.6)
Retrofit	3.6 (24.5)	3.6 (24.7)
Conversion to Western Coal	0.2	0.2
Total	505.2	779.2
Average Plant Cost		
Nuclear	1,093.6	1,096.0
Coal		
NSPS	712.6	712.6
ANSPS	703.9	704.9
Total	707.3	706.7
Oil/Gas		
Combined Cycle	456.5	458.0
Turbines	335.0	335.1
Total	345.0	346.6
Average Scrubber Cost		
NSPS	99.2	98.1
ANSPS	115.8	112.7
Retrofit	147.6	146.2
Total	117.4	113.9

(GW) -- Gigawatts.

* Gigawatts figures represent capacity built after 1975 rather than total.

CHANGE IN INCREMENTAL ANNUALIZED COST OF ELECTRICITY* UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU FLOOR; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM REMOVAL
WET SCRUBBING
(Percentage Change in Rates from Current Standard)
(10^6 $'s)
(1978 $'s)

	1990		1995	
New England	2.0	(0.04)	16.4	(0.28)
Middle Atlantic	69.3	(0.74)	195.2	(1.18)
South Atlantic	268.7	(0.95)	738.5	(2.18)
EAST	340.0		950.1	
EAST NORTH CENTRAL	120.2	(0.36)	558.1	(1.20)
EAST SOUTH CENTRAL	180.1	(1.01)	388.8	(1.93)
WEST NORTH CENTRAL	262.6	(1.66)	(18.3)	(1.99)
WEST SOUTH CENTRAL	243.4	(2.34)	915.3	(3.69)
Mountain	205.6	(2.30)	272.1	(2.56)
Pacific	31.7	(0.29)	117.8	(0.84)
WEST	237.3		389.9	
Total Annualized Cost	1,383.7	(1.01)	3,180.9	(1.85)
Present Value of Change in Annualized Cost	15,740.6		31,850.4	
Objective Function	1,403.3		3,005.2	
Present Value of Change in Objective Function	16,041.5		30,401.6	

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* Individual regional estimates can be distorted by changes in transmission between regions, causing anomalies such that costs or emissions decrease in one region while they increase in all others.

CHANGE IN SO_2 EMISSIONS RELATIVE TO CURRENT* STANDARD UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU FLOOR; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM REMOVAL
WET SCRUBBING
(10^3 tons)

	1990	1995
New England	(0.5)	16.1
Middle Atlantic	195.6	288.4
South Atlantic	273.7	679.4
EAST	468.8	983.9
EAST NORTH CENTRAL	(116.3)	(25.1)
EAST SOUTH CENTRAL	183.4	405.9
WEST NORTH CENTRAL	31.6	241.3
WEST SOUTH CENTRAL	431.7	801.8
Mountain	238.1	330.4
Pacific	44.6	168.3
WEST	282.7	498.7
TOTAL	1,281.8	2,906.4

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* Individual regional estimates can be distorted by changes in transmission between regions, causing anomalies such that costs or emissions decrease in one region while they increase in all others.

CHANGE IN ANNUALIZED COSTS PER TON REMOVED UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU FLOOR; 0.55 LBS. SO_2/MMBTU FLOOR; 33% MINIMUM REMOVAL
WET SCRUBBING
($/ton)

	1990	1995
EAST	725.3	965.6
CENTRAL	1,520.2	1,295.0
WEST	839.4	781.8
TOTAL	1,079.5	1,094.4

Change in costs between current NSPS (i.e., 1.2 pounds) and ANSPS divided by change in emissions.

COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING DRY SCRUBBING (10^6 tons)

Sector	1990	1995
Electric Utility	923.2	1,167.9
Scrubbed	482.6	735.5
Not Scrubbed	440.6	432.4
Industrial	276.0	319.4
Metallurgical	99.8	104.0
Residential/Commercial	0.7	0.4
Synthetics	56.0	88.2
Export	76.7	79.9
Total	1,432.5	1,759.8

1990 COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	194.7	445.7	282.9	923.2
Scrubbed	-	33.3	268.6	180.7	482.6
Not Scrubbed	-	161.4	177.1	102.2	440.6
Industrial	-	182.5	10.0	83.4	276.0
Metallurgical	68.6	-	31.2	-	99.8
Residential/Commercial	-	0.2	0.5	-	0.7
Synthetics	-	3.1	29.8	23.1	56.0
Export	60.8	2.8	3.9	9.2	76.7
Total	129.3	383.3	521.1	398.7	1,432.5

1995 COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	235.9	536.4	395.6	1,167.9
Scrubbed	-	71.0	369.3	295.1	735.5
Not Scrubbed	-	164.9	167.0	100.5	432.4
Industrial	-	214.3	27.1	78.0	319.4
Metallurgical	71.4	-	32.6	-	104.0
Residential/Commercial	-	0.1	0.2	-	0.4
Synthetics	-	5.3	41.4	41.5	88.2
Export	63.8	2.9	10.0	3.2	79.9
Total	135.2	458.6	647.7	518.4	1,759.8

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^3 tons)

	1975	1990	1995
New England			
Coal Plants			
Existing	48.4	139.8	103.3
NSPS	-	-	-
ANSPS	-	-	5.9
Oil/Gas Plants	101.8	100.7	73.2
Total	150.2	248.5	182.4
Middle Atlantic			
Coal Plants			
Existing	1,835.9	1,473.7	1,462.3
NSPS	-	97.2	103.0
ANSPS	-	147.5	303.0
Oil/Gas Plants	371.1	344.2	298.9
Total	2,207.6	2,062.5	2,167.3
South Atlantic			
Coal Plants			
Existing	2,632.2	3,124.4	3,080.6
NSPS	-	188.7	261.2
ANSPS	-	472.6	966.8
Oil/Gas Plants	746.1	498.8	303.6
Total	3,378.3	4,283.4	4,612.2
East			
Coal Plants			
Existing	4,516.5	4,737.9	4,646.2
NSPS	-	285.9	364.2
ANSPS	-	620.1	1,275.7
Oil/Gas Plants	1,219.6	843.0	675.7
Total	5,136.1	6,594.4	6,961.9
EAST NORTH CENTRAL			
Coal Plants			
Existing	6,771.8	5,002.9	4,856.9
NSPS	-	324.8	356.5
ANSPS	-	138.3	369.6
Oil/Gas Plants	103.4	124.2	86.0
Total	6,885.2	5,590.2	5,669.0

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^3 tons)

	1975	1990	1995
EAST SOUTH CENTRAL			
Coal Plants			
Existing	3,351.5	2,324.8	2,215.0
NSPS	-	203.0	221.5
ANSPS	-	400.0	680.3
Oil/Gas Plants	43.2	83.8	65.1
Total	3,394.7	3,011.5	3,182.0
WEST NORTH CENTRAL			
Coal Plants			
Existing	1,491.5	1,812.8	1,665.2
NSPS	-	394.3	428.8
ANSPS	-	62.9	141.5
Oil/Gas Plants	41.4	55.7	36.5
Total	1,532.9	2,325.7	2,271.9
WEST SOUTH CENTRAL			
Coal Plants			
Existing	203.7	149.8	149.8
NSPS	-	693.0	693.0
ANSPS	-	230.0	384.2
Oil/Gas Plants	209.0	545.8	451.4
Total	412.7	1,618.5	1,678.4
Mountain			
Coal Plants			
Existing	322.9	359.4	341.3
NSPS	-	168.1	166.6
ANSPS	-	112.3	209.1
Oil/Gas Plants	25.2	31.6	25.0
Total	358.1	671.4	742.0
Pacific			
Coal Plants			
Existing	47.6	78.3	66.7
NSPS	-	17.5	17.5
ANSPS	-	7.0	18.9
Oil/Gas Plants	148.1	129.7	110.0
Total	195.7	232.5	213.1

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^3 tons)

	1975	1990	1995
REST OF WEST			
Coal Plants			
Existing	380.5	437.7	408.0
NSPS	-	185.6	184.1
ANSPS	-	119.3	228.0
Oil/Gas Plants	173.3	161.3	135.0
Total	553.8	903.9	955.1
NATIONAL			
Coal Plants			
Existing	16,915.4	14,465.7	13,941.1
NSPS	-	2,086.6	2,248.2
ANSPS	-	1,570.5	3,079.2
Oil/Gas Plants	1,789.9	1,921.4	1,449.6
Total	18,705.3	20,044.2	20,718.1

Source for 1975 data: EPA National Emissions Data System, Computer Printout, May 1, 1978.

ANNUAL NATIONAL NO_x AND PARTICULATE EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^3 tons)

	NO_x		TSP	
	1990	1995	1990	1995
NATIONAL				
Oil/Gas	1,392.5	1,077.8	169.0	128.5
Coal	6,945.6	8,328.2	785.5	849.2
Existing	3,920.2	3,662.7	513.6	482.2
NSPS	1,324.8	1,419.7	186.6	199.9
ANSPS	1,700.6	3,245.8	85.3	167.1
Total	8,338.1	9,406.0	954.5	977.6

NATIONAL UTILITY FUEL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
NATIONAL			
Coal	9.3	19.7	24.8
Existing	9.3	10.3	9.6
NSPS	-	3.7	4.0
ANSPS	-	5.7	11.1
Oil/Gas	6.2	4.6	3.6
Nuclear	1.7	9.7	13.5
Hydro and Other	2.0	3.4	3.4
Total	19.2	37.4	45.2

	1975	1990	1995
Percent of Total			
Coal	48.4	52.7	54.9
Oil/Gas	32.3	12.3	8.0
Nuclear	8.9	25.9	29.9
Hydro and Other	10.4	9.1	7.5

UTILITY OIL/GAS CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England	0.425	0.241	0.170
Middle Atlantic	0.824	0.925	0.706
South Atlantic	1.010	0.838	0.527
EAST	2.259	2.003	1.403
EAST NORTH CENTRAL	0.317	0.416	0.297
EAST SOUTH CENTRAL	0.112	0.196	0.168
WEST NORTH CENTRAL	0.289	0.166	0.132
WEST SOUTH CENTRAL	2.162	1.185	0.984
Mountain	0.249	0.119	0.103
Pacific	0.787	0.564	0.498
WEST	1.036	0.683	0.601
TOTAL	6.175	4.649	3.585
Oil for Coal Transportation		0.276	0.349
TOTAL		4.925	3.934

UTILITY COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England			
High Sulfur		0.180	0.142
Medium Sulfur		0.005	0.015
Low Sulfur		-	-
Total	0.047	0.185	0.157
Middle Atlantic			
High Sulfur		0.557	0.891
Medium Sulfur		1.048	1.126
Low Sulfur		0.044	0.054
Total	1.076	1.649	2.071
South Atlantic			
High Sulfur		1.727	3.001
Medium Sulfur		1.957	1.915
Low Sulfur		0.305	0.410
Total	1.789	3.990	5.326
EAST			
High Sulfur		2.482	4.034
Medium Sulfur		3.010	3.056
Low Sulfur		0.348	0.464
Total	2.912	5.841	7.554
EAST NORTH CENTRAL			
High Sulfur		1.685	2.225
Medium Sulfur		1.801	1.745
Low Sulfur		0.725	0.736
Total	2.670	4.212	4.707
EAST SOUTH CENTRAL			
High Sulfur		1.845	2.452
Medium Sulfur		0.692	0.758
Low Sulfur		0.288	0.239
Total	1.328	2.825	3.448
WEST NORTH CENTRAL			
High Sulfur		0.463	0.499
Medium Sulfur		0.871	1.175
Low Sulfur		0.523	0.531
Total	0.783	1.857	2.205

UTILITY COAL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING DRY SCRUBBING (quadrillion Btu)

	1975	1990	1995
WEST SOUTH CENTRAL			
High Sulfur		0.110	0.058
Medium Sulfur		1.609	2.447
Low Sulfur		0.867	1.049
Total	0.119	2.586	3.555
Mountain			
High Sulfur		-	-
Medium Sulfur		1.244	1.673
Low Sulfur		0.875	1.058
Total	0.615	2.119	2.732
Pacific			
High Sulfur		-	-
Medium Sulfur		0.107	0.059
Low Sulfur		0.143	0.519
Total	0.069	0.251	0.578
REST OF WEST			
High Sulfur		-	-
Medium Sulfur		1.351	1.732
Low Sulfur		1.018	1.577
Total	0.685	2.370	3.310
NATIONAL			
High Sulfur		6.586	9.268
Medium Sulfur		9.335	10.914
Low Sulfur		3.770	4.596
Total	8.719	19.691	24.779

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Maine/Vt./New Hampshire				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Mass./Conn./Rhode Island				
ANSPS (Part)	-	--	-	-
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.455	BG	0.015	Ohio
ANSPS (No Scrub)	-	--	-	-
Total	0.455		0.015	
Pennsylvania, West				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	7.105	BG	0.289	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	7.105		0.289	
Pennsylvania, East/N.J./N.Y.DS				
ANSPS (Full)	1.039	BF	0.057	Pennsylvania
ANSPS (Full)	5.664	BG	0.223	Pennsylvania
ANSPS (No Scrub)	-	--	-	-
Total	6.703		0.279	
New York, Upstate				
ANSPS (Full)	1.524	BF	0.083	Pennsylvania
ANSPS (Full)	5.543	BG	0.206	Pennsylvania & Ohio
ANSPS (No Scrub)	-	--	-	-
Total	7.067		0.289	
Virginia/Md./Del.				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	7.785	BG	0.272	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	7.785		0.272	
West Virginia				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
North & South Carolina				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	12.479	BG	0.427	West Kentucky
ANSPS (No Scrub)	-	--	-	-
Total	12.479		0.427	
Georgia/North Florida				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	21.174	BG	0.921	Illinois & West Kentucky
ANSPS (No Scrub)	-	--	-	-
Total	21.174		0.921	
South Florida				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	18.534	BG	0.891	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	18.534		0.891	
Ohio, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Ohio, Central				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	7.795	BG	0.382	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	7.795		0.382	
Ohio, South				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	4.375	BG	0.158	Illinois & Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	4.375		0.158	
Michigan				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	6.554	BG	0.263	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	6.554		0.263	

1995 ANSPS COAL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Illinois				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	1.817	BG	0.060	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	1.817		0.060	
Indiana				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Wisconsin				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	2.830	BG	0.097	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	2.830		0.097	
Kentucky, East				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	3.660	BG	0.155	Indiana
ANSPS (No Scrub)	-	--	-	-
Total	3.660		0.155	
Kentucky, West				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	13.153	BG	0.635	Indiana & Illinois
ANSPS (No Scrub)	-		-	-
Total	13.153		0.635	
Tennessee, East				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.527	BG	0.018	Indiana
ANSPS (No Scrub)	-	--	-	-
Total	0.527		0.018	
Tennessee, West				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	14.190	BG	0.715	Illinois
ANSPS (No Scrub)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	14.190		0.715	

1995 ANSPS COAL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Alabama/Mississippi				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	6.218	BG	0.245	West Kentucky
ANSPS (No Scrub)	-	--	-	-
Total	6.218		0.245	
North & South Dakota/Minnesota				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.524	SF	0.018	Wyoming
ANSPS (Full)	0.838	LA	0.029	North Dakota
ANSPS (Full)	2.620	LD	0.091	North Dakota
ANSPS (No Scrub)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	3.982		0.137	
Kansas/Nebraska				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.174	BD	0.005	Wyoming
ANSPS (Full)	4.392	SF	0.200	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	4.566		0.205	
Iowa				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.071	BG	0.002	Illinois & Iowa
ANSPS (Full)	4.532	SF	0.249	Wyoming
ANSPS (No Scrub)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	4.603		0.251	
Missouri				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	3.276	BG	0.105	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	3.276		0.105	
Arkansas/Oklahoma/Louisiana				
ANSPS (Full)	0.374	BD	0.012	Wyoming
ANSPS (Full)	0.667	BF	0.021	Oklahoma & Arkansas
ANSPS (Full)	1.818	BG	0.058	Illinois
ANSPS (Full)	14.592	SF	0.709	Wyoming
Total	17.451		0.801	

1995 ANSPS COAL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Texas				
ANSPS (Full)	3.102	BA	0.089	South Colorado
ANSPS (Full)	3.213	BB	0.093	South Colorado
ANSPS (Full)	7.145	BD	0.378	New Mexico
ANSPS (Full)	6.809	SF	0.390	Wyoming
ANSPS (Full)	8.860	LF	0.518	Texas
Total	29.130		1.468	
Idaho				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	5.631	SF	0.309	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	5.631		0.309	
Montana				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	4.978	SA	0.304	West Montana
ANSPS (No Scrub)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	4.978		0.304	
Wyoming				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.328	SD	0.015	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	0.328		0.015	
Utah				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	1.154	BB	0.047	Utah
ANSPS (No Scrub)	-	--	-	-
Total	1.154		0.047	
Nevada				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	1.438	BB	0.081	Utah
ANSPS (No Scrub)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	1.438		0.081	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Colorado				
ANSPS (Full)	0.243	BD	0.009	New Mexico
ANSPS (Full)	8.976	SF	0.517	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	9.219		0.526	
Arizona				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	3.447	BD	0.180	New Mexico
ANSPS (No Scrub)	-	--	-	-
Total	3.447		0.180	
New Mexico				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	2.348	BD	0.128	New Mexico
ANSPS (No Scrub)	-	--	-	-
Total	2.348		0.128	
Washington/Oregon				
ANSPS (Full)	0.004	BB	0.000	Utah
ANSPS (Full)	0.005	BD	0.000	Wyoming
ANSPS (Full)	7.721	SA	0.471	West Montana
ANSPS (No Scrub)	-	--	-	-
Total	7.730		0.471	
California, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
California, South				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	

AGGREGATED REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia	158.2	219.2	290.6
Central Appalachia	211.1	170.1	164.0
Southern Appalachia	22.9	11.7	10.3
APPALACHIA	392.1	401.0	464.9
MIDWEST	138.6	392.2	487.7
Eastern Northern Great Plains	8.5	25.0	34.7
Western Northern Great Plains	45.2	430.6	593.0
NORTHERN GREAT PLAINS	53.7	455.6	627.7
Central West	9.5	4.9	8.6
Gulf	10.0	71.8	61.8
Rockies	14.0	51.0	62.4
Southwest	15.7	50.5	44.6
Northwest	4.5	5.6	2.9
REST OF WEST	50.0	183.8	180.2
TOTAL	634.6	1,432.5	1,760.5

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia			
Metallurgical	13.5	13.8	16.9
High Sulfur	107.1	93.6	123.6
Medium Sulfur	37.4	111.4	149.8
Low Sulfur	0.2	0.4	0.4
Total	158.1	219.2	290.6
Central Appalachia			
Metallurgical	83.0	115.6	123.1
High Sulfur	23.6	4.2	0.1
Medium Sulfur	91.9	33.8	23.8
Low Sulfur	12.6	16.5	17.1
Total	211.1	170.1	164.0
Southern Appalachia			
Metallurgical	1.7	3.6	4.8
High Sulfur	-	-	-
Medium Sulfur	21.2	4.2	1.0
Low Sulfur	-	4.0	4.6
Total	22.9	11.7	10.3
APPALACHIA			
Metallurgical	98.2	133.0	144.8
High Sulfur	130.7	97.8	123.6
Medium Sulfur	150.5	149.4	174.5
Low Sulfur	12.8	20.8	22.0
Total	392.1	401.0	464.9
MIDWEST			
Metallurgical	-	-	-
High Sulfur	131.6	292.0	379.0
Medium Sulfur	7.1	99.4	107.7
Low Sulfur	-	0.7	1.0
Total	138.6	392.2	487.7
Eastern Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	0.3	6.2	10.3
Medium Sulfur	7.8	14.5	20.6
Low Sulfur	0.4	4.2	3.8
Total	8.6	25.0	34.7

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Western Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	7.6	158.2	263.8
Low Sulfur	37.6	272.4	329.2
Total	45.2	430.6	593.0
NORTHERN GREAT PLAINS			
Metallurgical	-	-	-
High Sulfur	0.3	6.2	10.3
Medium Sulfur	15.4	172.7	284.4
Low Sulfur	38.0	276.6	333.0
Total	53.8	455.6	627.7
Central West			
Metallurgical	0.3	0.1	0.1
High Sulfur	8.4	3.2	5.7
Medium Sulfur	0.8	1.1	2.2
Low Sulfur	-	0.5	0.6
Total	8.5	4.9	8.6
Gulf			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	10.0	71.8	61.8
Low Sulfur	-	-	-
Total	10.0	71.8	61.8
Rockies			
Metallurgical	2.9	5.4	4.4
High Sulfur	-	-	-
Medium Sulfur	0.8	7.4	9.2
Low Sulfur	10.4	38.2	48.8
Total	14.1	51.0	62.4
Southwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	15.2	16.0	1.7
Low Sulfur	0.5	34.5	42.9
Total	15.7	50.5	44.6

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^6 tons)

	1975	1990	1995
Northwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	3.7	5.6	2.9
Low Sulfur	0.8	-	-
Total	4.5	5.6	2.9
WEST			
Metallurgical	3.3	5.5	4.5
High Sulfur	8.4	3.2	5.7
Medium Sulfur	30.4	101.9	77.7
Low Sulfur	11.7	73.2	92.4
Total	53.7	183.8	180.2
TOTAL			
Metallurgical	101.7	138.5	149.2
High Sulfur	147.8	399.2	518.6
Medium Sulfur	197.0	523.4	644.3
Low Sulfur	62.5	371.3	448.4
Total	509.0	1,432.5	1,760.5

MINE-MOUTH PRICE
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Northern Appalachia		
High Sulfur	1.12	1.19
Medium Sulfur	1.17	1.20
Low Sulfur	1.53	1.58
Regional Average	1.17	1.22
Central Appalachia		
High Sulfur	1.19	1.25
Medium Sulfur	1.31	1.42
Low Sulfur	1.51	1.59
Regional Average	1.48	1.57
Southern Appalachia		
High Sulfur	--	--
Medium Sulfur	1.30	1.42
Low Sulfur	1.53	1.58
Regional Average	1.47	1.60
Midwest		
High Sulfur	1.05	1.16
Medium Sulfur	1.25	1.31
Low Sulfur	1.53	1.60
Regional Average	1.11	1.19
Eastern Northern Great Plains		
High Sulfur	0.42	0.42
Medium Sulfur	0.43	0.43
Low Sulfur	0.42	0.45
Regional Average	0.43	0.43
Western Northern Great Plains (Bituminous)		
High Sulfur	--	--
Medium Sulfur	0.89	1.00
Low Sulfur	0.97	1.07
Regional Average	0.94	1.04
Western Northern Great Plains (Subbituminous)		
High Sulfur	--	--
Medium Sulfur	0.39	0.41
Low Sulfur	0.51	0.54
Regional Average	0.47	0.48

MINE-MOUTH PRICE
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Central West		
High Sulfur	1.16	1.22
Medium Sulfur	1.28	1.36
Low Sulfur	1.39	1.48
Regional Average	1.23	1.29
Gulf		
High Sulfur	--	--
Medium Sulfur	0.80	1.11
Low Sulfur	--	--
Regional Average	0.80	1.11
Rocky Mountain		
High Sulfur	--	--
Medium Sulfur	0.94	1.04
Low Sulfur	0.98	1.05
Regional Average	1.03	1.09
Southwest		
High Sulfur	--	--
Medium Sulfur	0.70	0.87
Low Sulfur	0.66	0.79
Regional Average	0.67	0.79
Northwest		
High Sulfur	--	--
Medium Sulfur	0.94	1.00
Low Sulfur	--	--
Regional Average	0.94	1.00
National		
High Sulfur	1.07	1.16
Medium Sulfur	0.95	0.94
Low Sulfur	0.70	0.74
Regional Average	1.54	1.04

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
($\$/10^6$ Btu)
(1978 $'s)

	1990	1995
Northeast		
High Sulfur	1.44	1.51
Medium Sulfur	1.91	1.86
Low Sulfur	--	--
Regional Average	1.45	1.54
Middle Atlantic		
High Sulfur	1.45	1.52
Medium Sulfur	1.48	1.52
Low Sulfur	1.84	1.92
Regional Average	1.48	1.53
South Atlantic		
High Sulfur	1.43	1.53
Medium Sulfur	1.55	1.60
Low Sulfur	1.81	2.08
Regional Average	1.52	1.60
East North Central		
High Sulfur	1.26	1.37
Medium Sulfur	1.48	1.52
Low Sulfur	1.65	1.71
Regional Average	1.42	1.48
East South Central		
High Sulfur	1.25	1.35
Medium Sulfur	1.48	1.53
Low Sulfur	1.65	1.74
Regional Average	1.35	1.42
West North Central		
High Sulfur	1.20	1.29
Medium Sulfur	1.00	0.98
Low Sulfur	1.15	1.22
Regional Average	1.09	1.11

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
West South Central		
High Sulfur	1.43	1.51
Medium Sulfur	1.04	1.21
Low Sulfur	1.40	1.44
Regional Average	1.18	1.28
Mountain		
High Sulfur	--	--
Medium Sulfur	0.91	0.77
Low Sulfur	0.72	0.92
Regional Average	0.80	0.83
Pacific		
High Sulfur	--	--
Medium Sulfur	1.07	1.13
Low Sulfur	1.07	1.11
Regional Average	1.07	1.11
National Total		
High Sulfur	1.32	1.43
Medium Sulfur	1.27	1.29
Low Sulfur	1.34	1.38
Regional Average	1.30	1.36

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

1990 NATIONAL COAL TRANSPORTATION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.6	95.4	80.8	31.2	-	-	-	-	-	219.0
Central Appalachia	-	20.2	86.0	54.9	7.1	0.7	1.2	-	-	170.1
Southern Appalachia	-	-	6.1	-	5.6	-	-	-	-	11.7
Midwest	-	-	61.6	171.2	133.0	24.3	2.1	-	-	392.2
Central West	-	-	-	-	0.8	1.4	2.4	-	0.3	4.9
Gulf	-	-	-	-	-	-	71.8	-	-	71.8
Eastern Northern Great Plains	-	-	-	-	-	24.7	-	0.3	-	25.0
Western Northern Great Plains	-	-	-	29.3	14.2	74.3	190.4	106.6	15.7	430.5
Rocky Mountains	-	-	-	16.2	-	0.3	10.5	15.4	8.7	51.1
Southwest	-	-	-	-	-	-	19.2	27.7	3.7	50.6
Northwest	-	-	-	-	-	-	-	-	5.6	5.6
Total	11.6	115.6	234.5	302.8	160.7	125.7	297.6	150.0	34.0	1,432.5

1995 NATIONAL COAL TRANSPORTATION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	10.0	115.6	112.4	52.2	-	-	-	-	-	290.2
Central Appalachia	-	21.3	80.9	56.9	4.0	0.9	-	-	-	164.0
Southern Appalachia	-	-	5.2	-	5.1	-	-	-	-	10.3
Midwest	-	-	95.1	190.2	174.7	26.0	1.7	-	-	487.7
Central West	-	-	-	-	0.7	2.6	5.1	-	0.1	8.5
Gulf	-	-	-	-	-	-	61.8	-	-	61.8
Eastern Northern Great Plains	-	-	-	-	-	34.6	-	0.1	-	34.7
Western Northern Great Plains	-	-	-	26.1	12.6	83.2	278.0	154.5	38.5	592.9
Rocky Mountains	-	-	-	15.3	-	3.3	15.0	16.6	12.2	62.4
Southwest	-	-	-	-	-	-	14.3	29.0	1.3	44.6
Northwest	-	-	-	-	-	-	-	-	2.9	2.9
Total	10.0	136.9	293.6	340.7	197.1	150.6	375.9	200.2	55.0	1,760.0

1990 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	3.70	-	-	-	-	-	-	3.70
South Atlantic	-	6.38	-	-	-	-	-	-	-	6.38
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	2.04	-	-	-	-	-	-	2.04
West North Central	-	-	-	-	-	-	1.00	-	-	1.00
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	10.82	10.82
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	6.38	5.74	-	-	-	1.00	-	10.82	23.94

1995 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	3.70	-	-	-	-	-	-	3.70
South Atlantic	-	5.14	-	-	-	-	-	-	-	5.14
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	-	-	-	-	-	-	-	-
West North Central	-	-	-	-	-	-	0.31	-	-	0.31
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	12.48	12.48
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	5.14	3.70	-	-	-	0.31	-	12.48	21.63

NATIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(GW (percent capacity factor))

	1975	1990	1995
NATIONAL			
Nuclear	37.2	165.3 (66.9)	230.0 (66.9)
Coal	183.6	390.4 (58.2)	520.2 (54.9)
Existing*	183.6	197.9 (58.9)	197.9 (55.2)
NSPS	-	80.5 (55.1)	80.5 (59.5)
ANSPS	-	112.0 (59.2)	241.7 (53.2)
Oil/Gas	192.1	227.5 (20.0)	217.8 (15.8)
Steam*	147.3	143.5 (25.1)	132.1 (20.4)
Combined Cycle	2.7	6.4 (26.4)	8.8 (22.2)
Turbines	42.2	77.7 (10.0)	76.9 (7.1)
Hydro and Others	68.3	87.8 (44.0)	89.5 (43.5)
Total	481.2	871.0 (48.4)	1,057.4 (48.5)
Percent of Total			
Nuclear	7.7	19.0	21.8
Coal	38.2	44.8	49.2
Oil/Gas	39.9	26.1	20.6
Other	14.2	10.1	8.5

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* Powerplants under ESECA orders to convert from oil and/or gas to coal (14.3 GW) are assumed to convert by 1985.

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
New England		
Nuclear	10.1 (70.0)	14.0 (70.0)
Coal	4.0 (56.2)	4.4 (36.9)
Existing	4.0 (56.2)	4.0 (36.8)
NSPS	-	-
ANSPS	-	0.5 (38.0)
Oil/Gas	8.8 (28.5)	7.4 (24.0)
Steam	7.7 (30.7)	5.2 (30.0)
Combined Cycle	0.4 (30.6)	0.4 (30.6)
Turbines	0.8 (5.0)	1.8 (5.0)
Hydro and Others	2.9 (18.1)	2.9 (18.1)
Total	25.8 (47.8)	28.7 (47.8)
Percent of Total		
Nuclear	39.1	48.8
Coal	15.5	15.3
Oil/Gas	34.1	25.8
Other	11.2	10.1
Middle Atlantic		
Nuclear	26.2 (65.3)	36.4 (65.3)
Coal	31.5 (59.5)	44.1 (53.6)
Existing	20.1 (60.6)	20.1 (57.2)
NSPS	3.1 (65.7)	3.8 (70.0)
ANSPS	8.3 (54.6)	20.9 (47.7)
Oil/Gas	38.2 (23.3)	34.3 (20.1)
Steam	21.1 (31.5)	20.9 (29.2)
Combined Cycle	0.4 (29.2)	0.4 (22.6)
Turbines	16.7 (12.9)	13.0 (5.3)
Hydro and Others	8.0 (46.1)	9.0 (41.4)
Total	103.8 (46.6)	123.8 (46.9)
Percent of Total		
Nuclear	25.2	29.4
Coal	30.3	35.6
Oil/Gas	36.8	27.7
Other	7.7	7.3

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
South Atlantic		
Nuclear	32.2 (66.2)	44.7 (66.2)
Coal	81.6 (58.5)	116.2 (54.5)
Existing	47.0 (62.8)	47.0 (61.0)
NSPS	9.3 (40.2)	9.3 (58.0)
ANSPS	25.4 (57.4)	60.0 (48.9)
Oil/Gas	39.4 (21.0)	34.4 (14.7)
Steam	22.3 (28.8)	18.0 (20.9)
Combined Cycle	0.6 (35.9)	0.6 (25.0)
Turbines	16.4 (9.8)	15.7 (7.2)
Hydro and Others	10.4 (23.8)	10.5 (23.7)
Total	163.5 (48.8)	205.7 (48.8)
Percent of Total		
Nuclear	19.7	21.7
Coal	49.9	56.5
Oil/Gas	24.1	16.7
Other	6.4	5.1
East North Central		
Nuclear	33.0 (67.7)	45.9 (67.7)
Coal	86.1 (55.3)	100.7 (53.1)
Existing	62.9 (58.6)	62.9 (55.8)
NSPS	14.5 (45.3)	14.5 (49.8)
ANSPS	8.7 (47.9)	23.4 (47.7)
Oil/Gas	20.5 (18.4)	18.5 (14.1)
Steam	10.7 (25.6)	9.5 (18.6)
Combined Cycle	0.2 (25.0)	0.2 (24.8)
Turbines	9.6 (10.3)	8.8 (8.9)
Hydro and Others	1.7 (16.9)	1.7 (16.9)
Total	141.2 (52.4)	166.9 (52.4)
Percent of Total		
Nuclear	23.4	27.5
Coal	61.0	60.3
Oil/Gas	14.5	11.1
Other	1.2	1.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
East South Central		
Nuclear	23.0 (67.4)	32.0 (67.4)
Coal	59.6 (55.5)	76.4 (52.9)
Existing	30.2 (55.1)	30.2 (49.7)
NSPS	8.4 (48.7)	8.4 (53.9)
ANSPS	21.0 (58.7)	37.7 (55.2)
Oil/Gas	15.1 (11.5)	16.1 (8.9)
Steam	3.0 (18.7)	3.0 (12.1)
Combined Cycle	-	-
Turbines	12.1 (9.8)	13.2 (8.2)
Hydro and Others	6.7 (41.6)	6.8 (40.9)
Total	104.4 (50.9)	131.3 (50.4)
Percent of Total		
Nuclear	22.0	24.4
Coal	57.1	58.2
Oil/Gas	14.5	12.3
Other	6.4	5.2
West North Central		
Nuclear	9.1 (65.0)	12.6 (65.0)
Coal	39.3 (52.8)	48.8 (50.5)
Existing	18.4 (50.5)	18.4 (44.5)
NSPS	14.0 (56.6)	14.0 (62.5)
ANSPS	6.9 (51.3)	16.4 (47.1)
Oil/Gas	14.7 (9.7)	16.1 (7.1)
Steam	4.3 (15.1)	4.3 (7.0)
Combined Cycle	0.9 (25.0)	0.9 (8.0)
Turbines	10.3 (7.4)	11.0 (7.0)
Hydro and Others	4.1 (41.2)	4.1 (41.2)
Total	67.1 (44.4)	80.9 (44.1)
Percent of Total		
Nuclear	13.6	15.6
Coal	58.6	60.3
Oil/Gas	21.9	19.9
Other	6.1	5.1

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
West South Central		
Nuclear	13.1 (65.0)	18.3 (65.0)
Coal	46.2 (64.8)	69.8 (58.3)
Existing	2.2 (64.8)	2.2 (64.8)
NSPS	20.9 (65.0)	20.9 (65.0)
ANSPS	23.0 (64.7)	46.6 (55.0)
Oil/Gas	59.3 (19.7)	58.0 (16.0)
Steam	55.7 (20.4)	54.4 (16.5)
Combined Cycle	1.4 (12.9)	1.4 (12.9)
Turbines	2.2 (6.0)	2.2 (6.0)
Hydro and Others	2.5 (19.5)	2.5 (19.5)
Total	121.0 (41.8)	148.4 (42.0)
Percent of Total		
Nuclear	10.8	12.3
Coal	38.2	47.0
Oil/Gas	49.0	39.1
Other	2.1	1.7
Mountain		
Nuclear	4.3 (65.4)	5.9 (65.4)
Coal	38.2 (63.7)	50.3 (62.2)
Existing	11.8 (63.4)	11.8 (58.8)
NSPS	10.0 (61.4)	10.0 (60.3)
ANSPS	16.3 (65.3)	28.5 (64.2)
Oil/Gas	7.6 (14.7)	7.9 (11.7)
Steam	3.1 (20.6)	2.9 (14.7)
Combined Cycle	0.5 (19.9)	0.5 (13.7)
Turbines	3.9 (9.4)	4.4 (9.5)
Hydro and Others	9.2 (45.9)	9.6 (45.5)
Total	59.1 (54.8)	73.7 (54.9)
Percent of Total		
Nuclear	7.3	8.0
Coal	64.6	68.2
Oil/Gas	12.9	10.7
Other	15.6	13.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(GW (percent capacity factor))

	1990	1995
Pacific		
Nuclear	14.4 (70.0)	20.1 (70.0)
Coal	4.1 (70.0)	9.5 (69.8)
Existing	1.3 (70.0)	1.3 (68.9)
NSPS	0.5 (70.0)	0.5 (70.0)
ANSPS	2.3 (70.0)	7.7 (70.0)
Oil/Gas	24.0 (25.2)	26.0 (20.5)
Steam	15.6 (29.7)	13.9 (26.1)
Combined Cycle	2.8 (31.1)	5.2 (24.7)
Turbines	5.6 (9.8)	6.9 (6.0)
Hydro and Others	42.4 (53.1)	42.4 (53.1)
Total	84.9 (48.9)	97.9 (49.6)
Percent of Total		
Nuclear	17.0	20.5
Coal	4.8	9.7
Oil/Gas	28.3	26.6
Other	49.9	43.3
National		
Nuclear	165.3 (66.9)	230.0 (66.9)
Coal	390.4 (58.2)	520.2 (54.9)
Existing*	197.9 (58.9)	197.9 (55.2)
NSPS	80.5 (55.1)	80.5 (59.5)
ANSPS	112.0 (59.2)	241.7 (53.2)
Oil/Gas	227.5 (20.0)	217.8 (15.8)
Steam*	143.5 (25.1)	132.1 (20.4)
Combined Cycle	6.4 (26.4)	8.8 (22.2)
Turbines	77.7 (10.0)	76.9 (7.1)
Hydro and Others	87.8 (44.0)	89.5 (43.5)
Total	871.0 (48.4)	1,057.4 (48.5)
Percent of Total		
Nuclear	19.0	21.8
Coal	44.8	49.2
Oil/Gas	26.1	20.6
Other	10.1	8.5

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING

DRY SCRUBBING

(GW)

	1990		1995	
	GW	(%)	GW	(%)
New England				
Capacity Full Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	0.455	(90.0)
Capacity Partially Scrubbed				
Existing	3.315	(79.8)	3.315	(79.8)
NSPS	-	-	-	-
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	3.315	(79.8)	3.315	(79.8)
NSPS	-	-	-	-
ANSPS	-	-	0.455	(90.0)
Middle Atlantic				
Capacity Fully Scrubbed				
Existing	1.951	(90.0)	1.951	(90.0)
NSPS	-	-	-	-
ANSPS	8.265	(90.0)	20.875	(90.0)
Capacity Partially Scrubbed				
Existing	5.994	(43.7)	5.991	(44.1)
NSPS	2.674	(64.1)	2.674	(64.1)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	7.945	(55.1)	7.942	(55.4)
NSPS	2.674	(64.1)	2.674	(64.1)
ANSPS	8.265	(90.0)	20.875	(90.0)
South Atlantic				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	25.397	(90.0)	59.972	(90.0)
Capacity Partially Scrubbed				
Existing	22.273	(51.3)	21.876	(51.5)
NSPS	2.359	(60.6)	2.433	(61.8)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	22.273	(51.3)	21.876	(51.5)
NSPS	2.359	(60.6)	2.433	(61.8)
ANSPS	25.397	(90.0)	59.972	(90.0)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
East				
Capacity Fully Scrubbed				
Existing	1.951	(90.0)	1.951	(90.0)
NSPS	-	-	-	-
ANSPS	33.662	(90.0)	81.302	(90.0)
Capacity Partially Scrubbed				
Existing	31.582	(52.8)	31.182	(54.2)
NSPS	5.033	(62.5)	5.107	(63.0)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	33.533	(55.0)	33.133	(56.3)
NSPS	5.033	(62.5)	5.107	(63.0)
ANSPS	33.662	(90.0)	81.302	(90.0)
East North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	8.718	(90.0)	23.369	(90.0)
Capacity Partially Scrubbed				
Existing	7.692	(74.1)	7.687	(74.2)
NSPS	4.829	(29.3)	4.674	(32.1)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	7.692	(74.1)	7.687	(74.2)
NSPS	4.829	(29.3)	4.674	(32.1)
ANSPS	8.718	(90.0)	23.369	(90.0)
East South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	20.994	(90.0)	37.748	(90.0)
Capacity Partially Scrubbed				
Existing	4.842	(76.0)	4.841	(76.0)
NSPS	3.540	(42.7)	4.390	(45.4)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	4.842	(76.0)	4.841	(76.0)
NSPS	3.540	(42.7)	4.390	(45.4)
ANSPS	20.994	(90.0)	37.748	(90.0)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
West North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	6.924	(90.0)	16.426	(90.0)
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(35.9)	5.001	(35.9)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(35.9)	5.001	(35.9)
ANSPS	6.924	(90.0)	16.426	(90.0)
West South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	22.984	(90.0)	46.581	(90.0)
Capacity Partially Scrubbed				
Existing	1.110	(64.1)	1.108	(64.1)
NSPS	5.095	(64.1)	5.095	(64.1)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	1.110	(64.1)	1.108	(64.1)
NSPS	5.095	(64.1)	5.095	(64.1)
ANSPS	22.984	(90.0)	46.581	(90.0)
Mountain				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	16.347	(90.0)	28.544	(90.0)
Capacity Partially Scrubbed				
Existing	3.119	(27.7)	3.089	(28.1)
NSPS	9.313	(55.8)	9.313	(54.0)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	3.119	(27.7)	3.089	(28.1)
NSPS	9.313	(55.8)	9.313	(54.0)
ANSPS	16.347	(90.0)	28.544	(90.0)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
Pacific				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	2.334	(90.0)	7.730	(90.0)
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	2.334	(90.0)	7.730	(90.0)
Rest of West				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	18.681	(90.0)	36.274	(90.0)
Capacity Partially Scrubbed				
Existing	3.119	(27.7)	3.089	(28.1)
NSPS	9.313	(55.8)	9.313	(54.0)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	3.119	(27.7)	3.089	(28.1)
NSPS	9.313	(55.8)	9.313	(54.0)
ANSPS	18.681	(90.0)	36.274	(90.0)
National				
Capacity Fully Scrubbed				
Existing	1.951	(90.0)	1.951	(90.0)
NSPS	-	-	-	-
ANSPS	111.964	(90.0)	241.701	(90.0)
Capacity Partially Scrubbed				
Existing	48.345	(57.2)	47.907	(57.4)
NSPS	32.811	(49.8)	33.579	(50.0)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	50.296	(58.5)	49.858	(58.7)
NSPS	32.811	(49.8)	33.579	(50.0)
ANSPS	111.964	(90.0)	241.701	(90.0)

SLUDGE GENERATED
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^3 tons)

	1990	1995
New England	896.2	660.6
Middle Atlantic	3,621.7	5,675.4
South Atlantic	9,050.7	15,795.0
EAST	13,568.6	22,131.0
EAST NORTH CENTRAL	4,287.0	7,208.6
EAST SOUTH CENTRAL	6,879.1	10,411.8
WEST NORTH CENTRAL	1,447.5	2,848.1
WEST SOUTH CENTRAL	5,176.5	8,224.8
Mountain	2,942.2	4,752.8
Pacific	155.7	424.7
WEST	3,097.9	5,177.5
TOTAL	34,456.6	56,001.8

UTILITY CAPITAL COSTS*
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^9 $'s)
(using 1978 dollars)

	1990	1995
National		
New Generation Capacity	293.5	458.2
Nuclear (GW)	140.2 (128.2)	211.3 (192.8)
Coal (GW)	136.3 (192.5)	228.3 (322.2)
NSPS	57.4 (80.5)	57.4 (80.5)
ANSPS	78.9 (112.0)	170.9 (241.7)
Oil/Gas	17.0 (49.3)	18.6 (53.2)
Combined Cycle (GW)	1.7 (3.7)	2.8 (6.1)
Turbine (GW)	15.3 (45.6)	15.8 (47.1)
Long Distance Transmission	6.2	6.7
Local Transmission and Distribution	179.0	269.7
Scrubbers (GW)	21.6 (189.4)	40.4 (319.4)
NSPS	1.8 (32.8)	1.8 (33.6)
ANSPS	16.1 (112.0)	34.9 (241.7)
Retrofit	3.7 (44.6)	3.7 (44.2)
Conversion to Western Coal	0.1	0.1
Total	500.4	775.0
Average Plant Cost		
Nuclear	1,093.6	1,096.0
Coal		
NSPS	712.7	712.7
ANSPS	705.6	707.0
Total	708.0	708.4
Oil/Gas		
Combined Cycle	456.1	459.3
Turbines	335.0	334.9
Total	344.1	349.2
Average Scrubber Cost		
NSPS	53.9	52.7
ANSPS	143.8	144.2
Retrofit	84.1	84.9
Total	114.2	126.4

(GW) -- Gigawatts.

* Gigawatts figures represent capacity built after 1975 rather than total.

CHANGE IN INCREMENTAL ANNUALIZED COST OF ELECTRICITY* UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING

(Percentage Change in Rates from Current Standard)
(10^6 $'s)
(1978 $'s)

	1990		1995	
New England	8.2	(0.17)	31.2	(0.53)
Middle Atlantic	60.7	(0.90)	215.1	(1.46)
South Atlantic	354.1	(1.12)	921.8	(2.55)
EAST	423.0		1,168.1	
EAST NORTH CENTRAL	350.7	(0.77)	833.8	(1.48)
EAST SOUTH CENTRAL	262.5	(1.41)	462.9	(2.30)
WEST NORTH CENTRAL	193.3	(1.19)	(55.2)	(3.09)
WEST SOUTH CENTRAL	451.5	(3.68)	1,182.4	(5.09)
Mountain	(112.1)	(3.77)	446.2	(4.67)
Pacific	682.1	(3.95)	383.1	(2.37)
WEST	570.0		829.3	
Total Annualized Cost	2,250.8	(1.67)	4,421.7	(2.55)
Present Value of Change in Annualized Cost	25,536.5		44,999.0	
Objective Function	2,151.2		4,751.9	
Present Value of Change in Objective Function	24,535.1		47,525.6	

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* Individual regional estimates can be distorted by changes in transmission between regions, causing anomalies such that costs or emissions decrease in one region while they increase in all others.

CHANGE IN SO_2 EMISSIONS RELATIVE TO CURRENT* STANDARD UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^3 tons)

	1990	1995
New England	-	14.3
Middle Atlantic	169.2	231.7
South Atlantic	239.3	464.3
EAST	408.5	710.3
EAST NORTH CENTRAL	26.6	44.9
EAST SOUTH CENTRAL	181.5	334.5
WEST NORTH CENTRAL	86.1	326.3
WEST SOUTH CENTRAL	546.0	942.3
Mountain	355.5	489.6
Pacific	37.8	249.6
WEST	393.3	739.2
TOTAL	1,642.0	3,097.6

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* Individual regional estimates can be distorted by changes in transmission between regions, causing anomalies such that costs or emissions decrease in one region while they increase in all others.

CHANGE IN ANNUALIZED COSTS PER TON REMOVED
UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
($/ton)

	1990	1995
EAST	1,035.5	1,644.5
CENTRAL	1,497.3	1,470.8
WEST	1,449.3	1,121.9
TOTAL	1,370.8	1,427.4

Change in costs between current NSPS (i.e., 1.2 pounds) and ANSPS divided by change in emissions.

COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^6 tons)

Sector	1990	1995
Electric Utility	928.4	1,173.2
Scrubbed	437.2	699.6
Not Scrubbed	491.2	473.5
Industrial	276.1	319.1
Metallurgical	99.9	104.1
Residential/Commercial	0.7	0.4
Synthetics	55.7	88.7
Export	76.8	80.0
Total	1,437.7	1,765.5

1990 COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	195.6	450.3	282.6	928.4
Scrubbed	-	27.6	228.2	181.5	437.2
Not Scrubbed	-	168.0	222.1	101.1	491.2
Industrial	-	182.7	15.6	77.8	276.1
Metallurgical	68.7	-	31.2	-	99.9
Residential/Commercial	-	0.2	0.5	-	0.7
Synthetics	-	3.4	34.7	17.7	55.7
Export	60.8	2.8	3.9	9.3	76.8
Total	129.5	384.6	536.2	387.3	1,437.7

1995 COAL CONSUMPTION BY SECTOR UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^6 tons)

Sector	Metallurgical	Low Sulfur	Medium Sulfur	High Sulfur	Total
Electric Utility	-	229.8	553.9	389.5	1,173.2
Scrubbed	-	64.6	344.9	290.1	699.6
Not Scrubbed	-	165.2	209.0	99.4	473.5
Industrial	-	214.0	24.3	80.9	319.1
Metallurgical	71.5	-	32.6	-	104.1
Residential/Commercial	-	0.1	0.3	-	0.4
Synthetics	-	5.3	41.5	41.9	88.7
Export	63.8	2.9	10.0	3.2	80.0
Total	135.3	452.1	662.6	515.5	1,765.5

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^3 tons)

	1975	1990	1995
New England			
Coal Plants			
Existing	48.4	132.7	98.4
NSPS	-	-	-
ANSPS	-	-	19.1
Oil/Gas Plants	101.8	108.7	55.9
Total	150.2	241.4	173.3
Middle Atlantic			
Coal Plants			
Existing	1,835.9	1,475.4	1,461.3
NSPS	-	104.8	102.0
ANSPS	-	156.6	305.5
Oil/Gas Plants	371.1	344.8	300.2
Total	2,207.6	2,081.6	2,169.0
South Atlantic			
Coal Plants			
Existing	2,632.2	3,128.6	3,051.3
NSPS	-	163.4	196.8
ANSPS	-	473.0	1,008.8
Oil/Gas Plants	746.1	497.7	303.6
Total	3,378.3	4,262.7	4,560.5
East			
Coal Plants			
Existing	4,516.5	4,736.7	4,611.0
NSPS	-	268.2	298.8
ANSPS	-	629.6	1,333.4
Oil/Gas Plants	1,219.6	951.2	659.7
Total	5,136.1	6,585.7	6,902.8
EAST NORTH CENTRAL			
Coal Plants			
Existing	6,771.8	5,008.0	4,824.5
NSPS	-	327.2	344.6
ANSPS	-	143.7	373.2
Oil/Gas Plants	103.4	123.7	85.5
Total	6,885.2	5,602.5	5,627.8

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^3 tons)

	1975	1990	1995
EAST SOUTH CENTRAL			
Coal Plants			
Existing	3,351.5	2,328.3	2,215.5
NSPS	-	211.1	221.6
ANSPS	-	394.8	681.5
Oil/Gas Plants	43.2	83.8	65.1
Total	3,394.7	3,017.9	3,183.7
WEST NORTH CENTRAL			
Coal Plants			
Existing	1,491.5	1,712.0	1,652.5
NSPS	-	393.3	414.7
ANSPS	-	62.9	136.7
Oil/Gas Plants	41.4	55.4	36.3
Total	1,532.9	2,253.6	2,240.2
WEST SOUTH CENTRAL			
Coal Plants			
Existing	203.7	150.0	150.0
NSPS	-	696.4	696.4
ANSPS	-	227.1	390.3
Oil/Gas Plants	209.0	545.7	451.6
Total	412.7	1,619.2	1,688.2
Mountain			
Coal Plants			
Existing	322.9	342.4	325.5
NSPS	-	169.7	168.1
ANSPS	-	115.6	209.7
Oil/Gas Plants	25.2	31.6	25.0
Total	358.1	659.2	728.4
Pacific			
Coal Plants			
Existing	47.6	78.3	66.7
NSPS	-	17.5	17.5
ANSPS	-	7.0	18.9
Oil/Gas Plants	148.1	123.1	110.0
Total	195.7	225.8	213.1

ANNUAL SO_2 EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^3 tons)

	1975	1990	1995
REST OF WEST			
Coal Plants			
Existing	380.5	420.7	392.2
NSPS	-	187.2	185.6
ANSPS	-	122.6	228.6
Oil/Gas Plants	173.3	154.7	135.0
Total	553.8	885.0	941.5
NATIONAL			
Coal Plants			
Existing	16,915.4	14,385.4	13,845.5
NSPS	-	2,083.6	2,161.9
ANSPS	-	1,580.6	3,143.6
Oil/Gas Plants	1,789.9	1,914.4	1,433.1
Total	18,705.3	19,964.0	20,584.1

Source for 1975 data: EPA National Emissions Data System, Computer Printout, May 1, 1978.

ANNUAL NATIONAL NO_x AND PARTICULATE EMISSIONS UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^3 tons)

	NO_x		TSP	
	1990	1995	1990	1995
NATIONAL				
Oil/Gas	1,383.6	1,064.9	168.3	127.1
Coal	6,962.3	8,337.6	786.4	845.3
Existing	3,921.5	3,657.4	513.8	481.5
NSPS	1,324.7	1,375.8	186.5	193.6
ANSPS	1,716.2	3,304.4	86.1	170.2
Total	8,345.9	9,402.4	954.8	972.4

NATIONAL UTILITY FUEL CONSUMPTION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
NATIONAL			
Coal	9.3	19.7	24.8
Existing	9.3	10.3	9.6
NSPS	-	3.7	3.9
ANSPS	-	5.7	11.3
Oil/Gas	6.2	4.6	3.6
Nuclear	1.7	9.7	13.5
Hydro and Other	2.0	3.4	3.4
Total	19.2	37.4	45.3
Percent of Total			
Coal	48.4	52.7	54.7
Oil/Gas	32.3	12.3	7.9
Nuclear	8.9	25.9	29.8
Hydro and Other	10.4	9.1	7.5

UTILITY OIL/GAS CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England	0.425	0.241	0.133
Middle Atlantic	0.824	0.928	0.712
South Atlantic	1.010	0.837	0.527
EAST	2.259	2.006	1.372
EAST NORTH CENTRAL	0.317	0.412	0.293
EAST SOUTH CENTRAL	0.112	0.196	0.168
WEST NORTH CENTRAL	0.289	0.164	0.132
WEST SOUTH CENTRAL	2.162	1.185	0.985
Mountain	0.249	0.119	0.103
Pacific	0.787	0.538	0.498
WEST	1.036	0.657	0.601
TOTAL	6.175	4.620	3.550
Oil for Coal Transportation		0.277	0.352
TOTAL		4.897	3.902

UTILITY COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
New England			
High Sulfur		0.188	0.170
Medium Sulfur		0.014	0.021
Low Sulfur		-	-
Total	0.047	0.203	0.191
Middle Atlantic			
High Sulfur		0.469	0.719
Medium Sulfur		1.209	1.382
Low Sulfur		0.015	0.010
Total	1.076	1.693	2.112
South Atlantic			
High Sulfur		1.818	3.092
Medium Sulfur		1.947	1.992
Low Sulfur		0.190	0.209
Total	1.789	3.955	5.293
EAST			
High Sulfur		2.475	3.981
Medium Sulfur		3.171	3.395
Low Sulfur		0.204	0.220
Total	2.912	5.850	7.596
EAST NORTH CENTRAL			
High Sulfur		1.721	2.160
Medium Sulfur		1.626	1.724
Low Sulfur		0.870	0.830
Total	2.670	4.217	4.714
EAST SOUTH CENTRAL			
High Sulfur		1.824	2.459
Medium Sulfur		0.709	0.720
Low Sulfur		0.295	0.272
Total	1.328	2.827	3.451
WEST NORTH CENTRAL			
High Sulfur		0.442	0.472
Medium Sulfur		0.883	1.182
Low Sulfur		0.536	0.536
Total	0.783	1.860	2.189

UTILITY COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(quadrillion Btu)

	1975	1990	1995
WEST SOUTH CENTRAL			
High Sulfur		0.098	0.050
Medium Sulfur		1.627	2.507
Low Sulfur		0.867	1.024
Total	0.119	2.593	3.581
Mountain			
High Sulfur		-	-
Medium Sulfur		1.251	1.672
Low Sulfur		0.900	1.064
Total	0.615	2.151	2.736
Pacific			
High Sulfur		-	-
Medium Sulfur		0.107	0.059
Low Sulfur		0.143	0.519
Total	0.069	0.251	0.578
REST OF WEST			
High Sulfur		-	-
Medium Sulfur		1.358	1.731
Low Sulfur		1.043	1.583
Total	0.685	2.402	3.314
NATIONAL			
High Sulfur		6.560	9.123
Medium Sulfur		9.374	11.260
Low Sulfur		3.815	4.464
Total	8.719	19.749	24.847

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Maine/Vt./New Hampshire				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Mass./Conn./Rhode Island				
ANSPS (Part)	-	--	-	-
ANSPS (Part)	-	--	-	-
ANSPS (Full)	1.471	BF	0.049	Ohio
ANSPS (No Scrub)	-	--	-	-
Total	1.471		0.049	
Pennsylvania, West				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	7.555	BG	0.327	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	7.555		0.327	
Pennsylvania, East/N.J./N.Y.DS				
ANSPS (Full)	1.791	BF	0.098	Pennsylvania
ANSPS (Full)	4.927	BG	0.182	Pennsylvania
ANSPS (No Scrub)	-	--	-	-
Total	6.718		0.280	
New York, Upstate				
ANSPS (Full)	2.078	BF	0.114	Pennsylvania
ANSPS (Full)	4.995	BG	0.178	Ohio & Pennsylvania & Ohio
ANSPS (No Scrub)	-	--	-	-
Total	7.073		0.291	
Virginia/Md./Del.				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	7.769	BG	0.271	Northern West Virginia
ANSPS (No Scrub)	-	--	-	-
Total	7.769		0.271	
West Virginia				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
North & South Carolina				
ANSPS (Part)	-	---	-	-
ANSPS (Full)	12.460	BG	0.421	West Kentucky
ANSPS (No Scrub)	-	---	-	-
Total	12.460		0.421	
Georgia/North Florida				
ANSPS (Part)	-	---	-	-
ANSPS (Full)	21.224	BG	1.037	Illinois
ANSPS (No Scrub)	-	---	-	-
Total	21.224		1.037	
South Florida				
ANSPS (Part)	-	---	-	-
ANSPS (Full)	18.534	BG	0.891	Northern West Virginia
ANSPS (No Scrub)	-	---	-	-
Total	18.534		0.891	
Ohio, North				
ANSPS (Part)	-	---	-	-
ANSPS (Full)	-	---	-	-
ANSPS (No Scrub)	-	---	-	-
Total	-		-	
Ohio, Central				
ANSPS (Part)	-	---	-	-
ANSPS (Full)	7.957	BG	0.391	Illinois
ANSPS (No Scrub)	-	---	-	-
Total	7.957		0.391	
Ohio, South				
ANSPS (Part)	-	---	-	-
ANSPS (Full)	4.375	BG	0.158	Northern West Virginia
ANSPS (No Scrub)	-	---	-	-
Total	4.375		0.158	
Michigan				
ANSPS (Part)	-	---	-	-
ANSPS (Full)	6.554	BG	0.263	Illinois
ANSPS (No Scrub)	-	---	-	-
Total	6.554		0.263	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Illinois				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	1.817	BG	0.060	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	1.817		0.060	
Indiana				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
Wisconsin				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	2.830	BG	0.097	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	2.830		0.097	
Kentucky, East				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	3.660	BG	0.155	Indiana
ANSPS (No Scrub)	-	--	-	-
Total	3.660		0.155	
Kentucky, West				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	13.153	BG	0.608	Indiana & Illinois
ANSPS (No Scrub)	-	--	-	-
Total	13.153		0.608	
Tennessee, East				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.527	BG	0.002	Indiana
ANSPS (No Scrub)	-	--	-	-
Total	0.527		0.002	
Tennessee, West				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	14.190	BG	0.715	Illinois
ANSPS (No Scrub)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	14.190		0.715	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Alabama/Mississippi				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	6.218	BG	0.046	West Kentucky
ANSPS (No Scrub)	-	--	-	-
Total	6.218		0.046	
North & South Dakota/Minnesota				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.155	SA	0.005	West Montana
ANSPS (Full)	0.472	SF	0.016	Wyoming
ANSPS (Full)	0.838	LA	0.029	North Dakota
ANSPS (Full)	2.517	LD	0.089	North Dakota
ANSPS (No Scrub)	-	--	-	-
Total	3.982		0.139	
Kansas/Nebraska				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.170	BD	0.005	Wyoming
ANSPS (Full)	0.005	BH	0.000	Missouri
ANSPS (Full)	4.392	SF	0.200	Wyoming
Total	4.566		0.205	
Iowa				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.043	BD	0.001	Wyoming
ANSPS (Full)	4.583	SF	0.251	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	4.627		0.252	
Missouri				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	2.939	BG	0.094	Illinois
ANSPS (No Scrub)	-	--	-	-
Total	2.939		0.094	
Arkansas/Oklahoma/Louisiana				
ANSPS (Full)	0.371	BD	0.012	Wyoming
ANSPS (Full)	0.638	BF	0.021	Oklahoma & Arkansas
ANSPS (Full)	1.559	BG	0.050	Illinois
ANSPS (Full)	15.208	SF	0.738	Wyoming
Total	17.776		0.820	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Texas				
ANSPS (Full)	2.473	BA	0.071	South Colorado
ANSPS (Full)	2.959	BB	0.085	South Colorado
ANSPS (Full)	7.574	BD	0.378	New Mexico
ANSPS (Full)	7.363	SF	0.421	Wyoming
ANSPS (Full)	8.760	LF	0.513	Texas
Total	29.129		1.469	
Idaho				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	5.626	SF	0.309	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	5.626		0.309	
Montana				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	4.978	SA	0.304	West Montana
ANSPS (No Scrub)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	4.978		0.304	
Wyoming				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	0.328	SD	0.015	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	0.328		0.015	
Utah				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	1.149	BB	0.046	Utah
ANSPS (No Scrub)	-	--	-	-
Total	1.149		0.046	
Nevada				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	1.035	BB	0.057	Utah
ANSPS (No Scrub)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	1.035		0.057	

1995 ANSPS COAL CONSUMPTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING

Demand Region	GW	Coal Type	Quads	Predominant Supply Region
Colorado				
ANSPS (Full)	0.197	BD	0.007	New Mexico
ANSPS (Full)	9.020	SF	0.519	Wyoming
ANSPS (No Scrub)	-	--	-	-
Total	9.218		0.526	
Arizona				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	4.056	BD	0.212	New Mexico
ANSPS (No Scrub)	-	--	-	-
Total	4.056		0.212	
New Mexico				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	2.177	BD	0.119	New Mexico
ANSPS (No Scrub)	-	--	-	-
Total	2.177		0.119	
Washington/Oregon				
ANSPS (Full)	0.004	BB	0.000	Utah
ANSPS (Full)	0.005	BD	0.000	Wyoming
ANSPS (Full)	7.721	SA	0.471	West Montana
ANSPS (No Scrub)	-	--	-	-
Total	7.730		0.471	
California, North				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	
California, South				
ANSPS (Part)	-	--	-	-
ANSPS (Full)	-	--	-	-
ANSPS (No Scrub)	-	--	-	-
Total	-		-	

AGGREGATED REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia	158.2	209.0	285.0
Central Appalachia	211.1	178.1	167.9
Southern Appalachia	22.9	12.2	9.9
APPALACHIA	392.1	399.4	462.8
MIDWEST	138.6	390.4	486.7
Eastern Northern Great Plains	8.5	24.9	34.6
Western Northern Great Plains	45.2	433.8	598.3
NORTHERN GREAT PLAINS	53.7	458.7	632.9
Central West	9.5	5.7	8.6
Gulf	10.0	71.8	61.8
Rockies	14.0	54.0	64.6
Southwest	15.7	50.6	44.6
Northwest	4.5	5.7	2.9
REST OF WEST	50.0	187.7	182.3
TOTAL	634.6	1,436.1	1,764.8

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^6 tons)

	1975	1990	1995
Northern Appalachia			
Metallurgical	13.5	17.4	19.7
High Sulfur	107.1	85.8	120.6
Medium Sulfur	37.4	105.4	144.3
Low Sulfur	0.2	0.4	0.4
Total	158.1	209.0	285.0
Central Appalachia			
Metallurgical	83.0	124.0	127.3
High Sulfur	23.6	4.2	0.1
Medium Sulfur	91.9	32.8	23.3
Low Sulfur	12.6	17.1	17.3
Total	211.1	178.1	167.9
Southern Appalachia			
Metallurgical	1.7	3.9	4.8
High Sulfur	-	-	-
Medium Sulfur	21.2	4.2	0.6
Low Sulfur	-	4.2	4.6
Total	22.9	12.2	9.9
APPALACHIA			
Metallurgical	98.2	145.3	151.7
High Sulfur	130.7	90.0	120.7
Medium Sulfur	150.5	142.4	168.1
Low Sulfur	12.8	21.6	22.3
Total	392.1	399.3	462.8
MIDWEST			
Metallurgical	-	-	-
High Sulfur	131.6	293.6	379.0
Medium Sulfur	7.1	96.1	106.8
Low Sulfur	-	0.7	1.0
Total	138.6	390.4	486.7
Eastern Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	0.3	0.3	10.3
Medium Sulfur	7.8	20.3	20.5
Low Sulfur	0.4	4.2	3.8
Total	8.6	24.9	34.6

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
$(10^6$ tons)

	1975	1990	1995
Western Northern Great Plains			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	7.6	156.3	265.6
Low Sulfur	37.6	277.5	332.7
Total	45.2	433.8	598.3
NORTHERN GREAT PLAINS			
Metallurgical	-	-	-
High Sulfur	0.3	0.3	10.3
Medium Sulfur	15.4	176.7	286.1
Low Sulfur	38.0	281.7	336.5
Total	53.8	458.7	632.9
Central West			
Metallurgical	0.3	0.1	0.1
High Sulfur	8.4	3.9	5.7
Medium Sulfur	0.8	1.1	2.2
Low Sulfur	-	0.5	0.6
Total	8.5	5.7	8.6
Gulf			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	10.0	71.8	61.8
Low Sulfur	-	-	-
Total	10.0	71.8	61.8
Rockies			
Metallurgical	2.9	5.5	4.4
High Sulfur	-	-	-
Medium Sulfur	0.8	7.3	9.2
Low Sulfur	10.4	41.4	51.0
Total	14.1	54.1	64.6
Southwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	15.2	16.0	1.1
Low Sulfur	0.5	34.6	43.5
Total	15.7	50.6	44.6

REGIONAL COAL PRODUCTION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^6 tons)

	1975	1990	1995
Northwest			
Metallurgical	-	-	-
High Sulfur	-	-	-
Medium Sulfur	3.7	5.6	2.9
Low Sulfur	0.8	-	-
Total	4.5	5.6	2.9
WEST			
Metallurgical	3.3	5.6	4.5
High Sulfur	8.4	3.9	5.7
Medium Sulfur	30.4	101.7	77.1
Low Sulfur	11.7	76.5	95.1
Total	53.7	187.7	182.3
TOTAL			
Metallurgical	101.7	150.9	156.2
High Sulfur	147.8	387.8	515.7
Medium Sulfur	197.0	516.9	638.1
Low Sulfur	62.5	380.5	454.8
Total	509.0	1,436.1	1,764.8

MINE-MOUTH PRICE
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING

($\$/10^6$ Btu)
(1978 $'s)

	1990	1995
Northern Appalachia		
High Sulfur	1.10	1.19
Medium Sulfur	1.15	1.20
Low Sulfur	1.54	1.60
Regional Average	1.17	1.22
Central Appalachia		
High Sulfur	1.18	1.26
Medium Sulfur	1.30	1.37
Low Sulfur	1.52	1.57
Regional Average	1.49	1.57
Southern Appalachia		
High Sulfur	--	--
Medium Sulfur	1.29	1.44
Low Sulfur	1.54	1.59
Regional Average	1.48	1.62
Midwest		
High Sulfur	1.06	1.16
Medium Sulfur	1.24	1.30
Low Sulfur	1.55	1.60
Regional Average	1.10	1.19
Eastern Northern Great Plains		
High Sulfur	0.42	0.42
Medium Sulfur	0.43	0.43
Low Sulfur	0.42	0.45
Regional Average	0.43	0.43
Western Northern Great Plains (Bituminous)		
High Sulfur	--	--
Medium Sulfur	0.89	1.00
Low Sulfur	0.99	1.07
Regional Average	0.95	1.04
Western Northern Great Plains (Subbituminous)		
High Sulfur	--	--
Medium Sulfur	0.39	0.41
Low Sulfur	0.51	0.54
Regional Average	0.46	0.48

MINE-MOUTH PRICE
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING

($\$/10^6$ Btu)
(1978 $'s)

	1990	1995
Central West		
High Sulfur	1.16	1.22
Medium Sulfur	1.29	1.36
Low Sulfur	1.41	1.48
Regional Average	1.22	1.29
Gulf		
High Sulfur	--	--
Medium Sulfur	0.80	1.11
Low Sulfur	--	--
Regional Average	0.80	1.11
Rocky Mountain		
High Sulfur	--	--
Medium Sulfur	0.93	1.04
Low Sulfur	0.98	1.06
Regional Average	1.02	1.09
Southwest		
High Sulfur	--	--
Medium Sulfur	0.66	0.87
Low Sulfur	0.68	0.80
Regional Average	0.67	0.80
Northwest		
High Sulfur	--	--
Medium Sulfur	0.94	1.00
Low Sulfur	--	--
Regional Average	0.94	1.00
National		
High Sulfur	1.07	1.16
Medium Sulfur	0.93	0.94
Low Sulfur	0.71	0.74
Regional Average	1.00	1.04

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

DELIVERED COAL PRICES TO ELECTRIC UTILITIES UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING

WET SCRUBBING
($/$10^6$ Btu)
(1978 $'s)

	1990	1995
Northeast		
High Sulfur	1.42	1.49
Medium Sulfur	1.74	1.81
Low Sulfur	--	--
Regional Average	1.44	1.53
Middle Atlantic		
High Sulfur	1.46	1.52
Medium Sulfur	1.45	1.51
Low Sulfur	1.79	1.85
Regional Average	1.46	1.52
South Atlantic		
High Sulfur	1.43	1.53
Medium Sulfur	1.66	1.70
Low Sulfur	1.82	1.87
Regional Average	1.56	1.61
East North Central		
High Sulfur	1.26	1.37
Medium Sulfur	1.45	1.50
Low Sulfur	1.67	1.72
Regional Average	1.42	1.48
East South Central		
High Sulfur	1.26	1.36
Medium Sulfur	1.45	1.52
Low Sulfur	1.68	1.76
Regional Average	1.35	1.42
West North Central		
High Sulfur	1.20	1.29
Medium Sulfur	1.02	1.00
Low Sulfur	1.16	1.22
Regional Average	1.00	1.11

DELIVERED COAL PRICES TO ELECTRIC UTILITIES
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS;
1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING

($/$10^6$ Btu)
(1978 $'s)

	1990	1995
West South Central		
High Sulfur	1.43	1.51
Medium Sulfur	1.04	1.21
Low Sulfur	1.40	1.44
Regional Average	1.18	1.28
Mountain		
High Sulfur	--	--
Medium Sulfur	0.71	0.77
Low Sulfur	0.91	0.93
Regional Average	0.80	0.83
Pacific		
High Sulfur	--	--
Medium Sulfur	1.07	1.13
Low Sulfur	1.07	1.11
Regional Average	1.07	1.11
National Total		
High Sulfur	1.32	1.43
Medium Sulfur	1.28	1.31
Low Sulfur	1.35	1.35
Regional Average	1.31	1.36

NOTE: Certain anomalies in the behavior of prices are apparent. This is due to the averaging (consumption weighted) associated with aggregating the 39 demand regions into nine larger regions, where expensive coal in one demand region is averaged with less expensive coal in another region and where the relative volumes of these coals change between scenarios. This can result in a situation where the price of each coal increases, for example, but the weighted average decreases because more lower-priced coal and less higher-priced coal is forecasted.

1990 NATIONAL COAL TRANSPORTATION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^6 tons)

Origin	Destination New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.6	97.8	66.8	32.4	-	-	-	-	-	208.6
Central Appalachia	-	19.4	93.4	57.0	6.5	0.7	1.2	-	-	178.2
Southern Appalachia	-	-	6.6	-	5.6	-	-	-	-	12.2
Midwest	-	-	66.9	166.3	132.3	23.2	1.7	-	-	390.4
Central West	-	-	-	-	1.0	1.4	2.9	-	0.3	5.6
Gulf	-	-	-	-	-	-	71.8	-	-	71.8
Eastern Northern Great Plains	-	-	-	-	-	24.8	-	0.2	-	25.0
Western Northern Great Plains	-	-	-	27.5	15.1	75.4	193.1	106.9	15.7	433.7
Rocky Mountains	-	-	-	19.7	-	0.3	10.7	13.2	9.3	53.2
Southwest	-	-	-	-	-	-	17.3	30.2	3.1	50.6
Northwest	-	-	-	-	-	-	-	-	5.6	5.6
Total	11.6	117.2	233.7	302.9	160.5	125.8	298.7	150.5	34.0	1,434.9

1995 NATIONAL COAL TRANSPORTATION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^6 tons)

Origin	Destination									
	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Northern Appalachia	11.3	118.2	101.5	53.4	-	-	-	-	-	284.4
Central Appalachia	-	20.1	86.5	56.6	3.9	0.9	-	-	-	168.0
Southern Appalachia	-	-	5.0	-	4.9	-	-	-	-	9.9
Midwest	-	-	99.7	187.3	173.8	24.5	1.3	-	-	486.6
Central West	-	-	-	-	0.6	2.7	5.1	-	0.1	8.5
Gulf	-	-	-	-	-	-	61.8	-	-	61.8
Eastern Northern Great Plains	-	-	-	-	-	34.5	-	0.1	-	34.6
Western Northern Great Plains	-	-	-	25.1	14.5	84.0	281.6	154.6	38.5	598.3
Rocky Mountains	-	-	-	18.6	-	3.2	14.0	16.0	12.7	64.5
Southwest	-	-	-	-	-	-	14.1	29.8	0.7	44.6
Northwest	-	-	-	-	-	-	-	-	2.9	2.9
Total	11.3	138.3	292.7	341.0	197.7	149.8	377.9	200.5	54.9	1,764.1

1990 INTER-REGIONAL ELECTRICITY TRANSMISSION UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING WET SCRUBBING (10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	3.70	-	-	-	-	-	-	3.70
South Atlantic	-	5.61	-	-	-	-	-	-	-	5.61
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	2.04	-	-	-	-	-	-	2.04
West North Central	-	-	-	-	-	-	1.00	-	-	1.00
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	11.26	11.26
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	5.61	5.74	-	-	-	1.00	-	11.26	23.61

1995 INTER-REGIONAL ELECTRICITY TRANSMISSION
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(10^6 tons)

	Destination									
Origin	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
New England	-	-	-	-	-	-	-	-	-	-
Middle Atlantic	-	-	3.70	-	-	-	-	-	-	3.70
South Atlantic	-	4.37	-	-	-	-	-	-	-	4.37
East North Central	-	-	-	-	-	-	-	-	-	-
East South Central	-	-	-	-	-	-	-	-	-	-
West North Central	-	-	-	-	-	-	-	-	-	-
West South Central	-	-	-	-	-	-	-	-	-	-
Mountain	-	-	-	-	-	-	-	-	12.48	12.48
Pacific	-	-	-	-	-	-	-	-	-	-
Total	-	4.37	3.70	-	-	-	-	-	12.48	20.55

NATIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
DRY SCRUBBING
(GW (percent capacity factor))

	1975	1990	1995
NATIONAL			
Nuclear	37.2	165.3 (66.9)	230.0 (66.9)
Coal	183.6	390.9 (58.2)	522.1 (54.9)
Existing*	183.6	197.9 (58.8)	197.9 (55.0)
NSPS	-	79.8 (55.3)	79.8 (57.6)
ANSPS	-	113.2 (59.2)	243.4 (53.9)
Oil/Gas	192.1	227.2 (19.9)	216.9 (15.6)
Steam*	147.3	143.0 (25.0)	131.1 (20.2)
Combined Cycle	2.7	6.4 (26.2)	8.8 (22.2)
Turbines	42.2	77.7 (10.0)	77.0 (7.1)
Hydro and Others	68.3	87.8 (44.0)	89.5 (43.5)
Total	481.2	871.1 (48.4)	1,057.4 (48.5)
Percent of Total			
Nuclear	7.7	19.0	21.8
Coal	38.2	44.9	49.3
Oil/Gas	39.9	26.1	20.5
Other	14.2	10.1	8.5

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* Powerplants under ESECA orders to convert from oil and/or gas to coal (14.3 GW) are assumed to convert by 1985.

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
New England		
Nuclear	10.1 (70.0)	14.0 (70.0)
Coal	4.0 (56.2)	5.5 (37.1)
Existing	4.0 (56.2)	4.0 (36.8)
NSPS	-	-
ANSPS	-	1.5 (38.0)
Oil/Gas	8.8 (28.5)	6.3 (7.7)
Steam	7.7 (30.7)	4.2 (28.0)
Combined Cycle	0.4 (30.6)	0.4 (30.6)
Turbines	0.8 (5.0)	1.8 (5.0)
Hydro and Others	2.9 (18.1)	2.9 (18.1)
Total	25.8 (47.8)	28.7 (47.8)
Percent of Total		
Nuclear	39.1	48.8
Coal	15.5	19.2
Oil/Gas	34.1	22.0
Other	11.2	10.1
Middle Atlantic		
Nuclear	26.2 (65.3)	36.4 (65.3)
Coal	31.9 (60.2)	44.6 (54.0)
Existing	20.1 (60.9)	20.1 (57.2)
NSPS	3.1 (70.0)	3.1 (67.9)
ANSPS	8.7 (55.2)	21.3 (49.0)
Oil/Gas	38.5 (23.2)	34.6 (20.1)
Steam	21.1 (31.5)	20.9 (29.3)
Combined Cycle	0.4 (29.2)	0.4 (29.2)
Turbines	17.0 (12.8)	13.3 (5.4)
Hydro and Others	8.0 (46.1)	9.0 (41.4)
Total	104.6 (46.8)	124.6 (47.0)
Percent of Total		
Nuclear	25.0	29.2
Coal	30.5	35.8
Oil/Gas	36.8	27.8
Other	7.6	7.2

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
South Atlantic		
Nuclear	32.2 (66.2)	44.7 (66.2)
Coal	80.9 (58.4)	115.4 (54.4)
Existing	47.0 (62.8)	47.0 (59.9)
NSPS	8.5 (37.5)	8.5 (46.3)
ANSPS	25.4 (57.4)	60.0 (51.3)
Oil/Gas	39.4 (21.0)	34.4 (14.7)
Steam	22.3 (28.8)	18.0 (20.9)
Combined Cycle	0.6 (35.9)	0.6 (25.0)
Turbines	16.4 (9.8)	15.7 (7.2)
Hydro and Others	10.4 (23.8)	10.5 (23.7)
Total	162.8 (48.7)	205.0 (48.8)
Percent of Total		
Nuclear	19.8	21.8
Coal	49.7	56.3
Oil/Gas	24.2	16.8
Other	6.4	5.1
East North Central		
Nuclear	33.0 (67.7)	45.9 (67.7)
Coal	86.2 (55.3)	100.9 (53.0)
Existing	62.9 (58.5)	62.9 (56.2)
NSPS	14.5 (44.9)	14.5 (47.8)
ANSPS	8.9 (49.0)	23.5 (47.9)
Oil/Gas	20.3 (18.4)	18.4 (14.0)
Steam	10.7 (25.6)	9.5 (18.6)
Combined Cycle	0.2 (19.1)	0.2 (12.1)
Turbines	9.4 (10.2)	8.6 (8.9)
Hydro and Others	1.7 (16.9)	1.7 (16.9)
Total	141.2 (52.4)	166.9 (52.4)
Percent of Total		
Nuclear	23.4	27.5
Coal	61.0	60.5
Oil/Gas	14.4	11.0
Other	1.2	1.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
East South Central		
Nuclear	23.0 (67.4)	32.0 (67.4)
Coal	59.6 (55.5)	76.4 (52.9)
Existing	30.2 (55.2)	30.2 (49.7)
NSPS	8.4 (50.5)	8.4 (53.4)
ANSPS	21.0 (57.8)	37.7 (55.4)
Oil/Gas	15.1 (11.5)	16.1 (8.9)
Steam	3.0 (18.7)	3.0 (12.1)
Combined Cycle	-	-
Turbines	12.1 (9.8)	13.2 (8.2)
Hydro and Others	6.7 (41.6)	6.8 (40.9)
Total	104.4 (50.9)	131.3 (50.4)
Percent of Total		
Nuclear	22.0	24.4
Coal	57.1	58.2
Oil/Gas	14.5	12.3
Other	6.4	5.2
West North Central		
Nuclear	9.1 (65.0)	12.6 (65.0)
Coal	39.4 (52.8)	48.5 (50.4)
Existing	18.4 (50.1)	18.4 (44.5)
NSPS	14.0 (57.2)	14.0 (61.7)
ANSPS	7.0 (51.0)	16.1 (47.5)
Oil/Gas	14.6 (9.6)	15.3 (7.0)
Steam	4.3 (15.1)	4.3 (6.9)
Combined Cycle	0.9 (25.0)	0.9 (8.0)
Turbines	10.2 (7.2)	11.0 (7.0)
Hydro and Others	4.1 (41.2)	4.1 (41.2)
Total	67.1 (44.4)	80.5 (44.0)
Percent of Total		
Nuclear	13.6	15.7
Coal	58.7	60.2
Oil/Gas	21.8	19.0
Other	6.1	5.1

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
West South Central		
Nuclear	13.1 (65.0)	18.2 (65.0)
Coal	46.2 (64.8)	70.1 (58.4)
Existing	2.2 (64.4)	2.2 (64.4)
NSPS	20.9 (65.0)	20.9 (65.0)
ANSPS	23.0 (64.7)	46.9 (55.1)
Oil/Gas	59.3 (19.7)	58.0 (16.0)
Steam	55.7 (20.4)	54.4 (16.5)
Combined Cycle	1.4 (12.9)	1.4 (12.9)
Turbines	2.2 (6.0)	2.2 (6.0)
Hydro and Others	2.5 (19.5)	2.5 (19.5)
Total	121.1 (41.8)	148.8 (42.0)
Percent of Total		
Nuclear	10.8	12.2
Coal	38.2	47.1
Oil/Gas	49.0	39.0
Other	2.1	1.7
Mountain		
Nuclear	4.3 (65.4)	5.9 (65.4)
Coal	38.7 (63.6)	50.4 (62.1)
Existing	11.8 (63.2)	11.8 (58.9)
NSPS	10.0 (61.4)	10.0 (60.3)
ANSPS	16.9 (65.2)	28.6 (64.1)
Oil/Gas	7.6 (14.7)	7.9 (11.7)
Steam	3.1 (20.6)	2.9 (14.7)
Combined Cycle	0.5 (19.9)	0.5 (13.7)
Turbines	3.9 (9.4)	4.4 (9.5)
Hydro and Others	9.2 (45.9)	9.6 (45.5)
Total	59.6 (54.8)	73.7 (54.8)
Percent of Total		
Nuclear	7.2	8.0
Coal	64.9	68.4
Oil/Gas	12.8	10.7
Other	15.4	13.0

REGIONAL GENERATION CAPACITY (AND AVERAGE CAPACITY FACTOR) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(GW (percent capacity factor))

	1990	1995
Pacific		
Nuclear	14.4 (70.0)	20.1 (70.0)
Coal	4.1 (70.0)	9.5 (69.8)
Existing	1.3 (70.0)	1.3 (68.9)
NSPS	0.5 (70.0)	0.5 (70.0)
ANSPS	2.3 (70.0)	7.7 (70.0)
Oil/Gas	23.6 (24.4)	26.0 (20.5)
Steam	15.2 (28.5)	13.9 (26.1)
Combined Cycle	2.8 (31.1)	5.2 (24.7)
Turbines	5.6 (9.8)	6.9 (6.0)
Hydro and Others	42.4 (53.1)	42.4 (53.1)
Total	84.5 (48.8)	97.9 (49.6)
Percent of Total		
Nuclear	17.0	20.5
Coal	4.9	9.7
Oil/Gas	27.9	26.6
Other	50.2	43.3
National		
Nuclear	165.3 (66.9)	230.0 (66.9)
Coal	390.9 (58.2)	521.1 (54.9)
Existing*	197.9 (58.8)	197.9 (55.0)
NSPS	79.8 (55.3)	79.8 (57.6)
ANSPS	113.2 (59.2)	243.4 (53.9)
Oil/Gas	227.2 (19.9)	216.9 (15.6)
Steam*	143.0 (25.0)	131.1 (20.2)
Combined Cycle	6.4 (26.2)	8.8 (22.2)
Turbines	77.7 (10.0)	77.0 (7.1)
Hydro and Others	87.8 (44.0)	89.5 (43.5)
Total	871.1 (48.4)	1,057.4 (48.5)
Percent of Total		
Nuclear	19.0	21.8
Coal	44.9	49.3
Oil/Gas	26.1	20.5
Other	10.1	8.5

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING

WET SCRUBBING

(GW)

	1990		1995	
	GW	(%)	GW	(%)
New England				
Capacity Full Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	1.471	(90.0)
Capacity Partially Scrubbed				
Existing	3.315	(79.8)	3.315	(79.8)
NSPS	-	-	-	-
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	3.315	(79.8)	3.315	(79.8)
NSPS	-	-	-	-
ANSPS	-	-	1.471	(90.0)
Middle Atlantic				
Capacity Fully Scrubbed				
Existing	2.245	(90.0)	2.650	(90.0)
NSPS	-	-	-	-
ANSPS	8.697	(90.0)	21.346	(90.0)
Capacity Partially Scrubbed				
Existing	3.147	(64.1)	2.736	(59.2)
NSPS	2.180	(64.1)	2.808	(64.1)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	5.392	(74.8)	5.386	(74.4)
NSPS	2.180	(64.1)	2.808	(64.1)
ANSPS	8.697	(90.0)	21.346	(90.0)
South Atlantic				
Capacity Fully Scrubbed				
Existing	2.555	(90.0)	2.555	(90.0)
NSPS	-	-	-	-
ANSPS	25.435	(90.0)	59.987	(90.0)
Capacity Partially Scrubbed				
Existing	3.715	(60.0)	4.002	(50.6)
NSPS	2.126	(64.2)	2.126	(64.1)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	6.270	(90.0)	6.557	(66.0)
NSPS	2.126	(64.2)	2.126	(64.1)
ANSPS	25.435	(90.0)	59.987	(90.0)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING

WET SCRUBBING

(GW)

	1990		1995	
	GW	(%)	GW	(%)
East				
Capacity Fully Scrubbed				
Existing	4.800	(90.0)	5.205	(90.0)
NSPS	-	-	-	-
ANSPS	34.132	(90.0)	82.804	(90.0)
Capacity Partially Scrubbed				
Existing	10.177	(67.7)	10.053	(62.5)
NSPS	4.306	(64.1)	4.934	(64.1)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	14.977	(74.9)	15.258	(71.9)
NSPS	4.306	(64.1)	4.934	(64.1)
ANSPS	34.132	(90.0)	82.804	(90.0)
East North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	8.882	(90.0)	23.531	(90.0)
Capacity Partially Scrubbed				
Existing	7.079	(75.6)	7.282	(72.9)
NSPS	2.620	(50.5)	2.619	(49.8)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	7.079	(75.6)	7.282	(72.9)
NSPS	2.620	(50.5)	2.619	(49.8)
ANSPS	8.882	(90.0)	23.531	(90.0)
East South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	20.997	(90.0)	37.748	(90.0)
Capacity Partially Scrubbed				
Existing	4.842	(76.0)	4.842	(75.9)
NSPS	3.344	(56.3)	3.772	(47.8)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	4.842	(76.0)	4.842	(75.9)
NSPS	3.344	(56.3)	3.772	(47.8)
ANSPS	20.997	(90.0)	37.748	(90.0)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(GW)

	1990		1995	
	GW	(%)	GW	(%)
West North Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	7.010	(90.0)	16.114	(90.0)
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	5.001	(27.7)	5.001	(27.7)
ANSPS	7.010	(90.0)	16.114	(90.0)
West South Central				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	23.001	(90.0)	46.905	(90.0)
Capacity Partially Scrubbed				
Existing	1.110	(64.1)	1.109	(64.1)
NSPS	5.094	(64.1)	5.094	(64.1)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	1.110	(64.1)	1.109	(64.1)
NSPS	5.094	(64.1)	5.094	(64.1)
ANSPS	23.001	(90.0)	46.905	(90.0)
Mountain				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	16.852	(90.0)	28.567	(90.0)
Capacity Partially Scrubbed				
Existing	1.994	(27.7)	1.987	(27.8)
NSPS	9.313	(56.6)	9.309	(55.1)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	1.994	(27.7)	1.987	(27.8)
NSPS	9.313	(56.6)	9.309	(55.1)
ANSPS	16.852	(90.0)	28.567	(90.0)

SCRUBBER CAPACITY AND PERCENT OF SO_2 REMOVED (ON ANNUAL BASIS) UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING

WET SCRUBBING

(GW)

	1990		1995	
	GW	(%)	GW	(%)
Pacific				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	2.334	(90.0)	7.730	(90.0)
Capacity Partially Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	2.334	(90.0)	7.730	(90.0)
Rest of West				
Capacity Fully Scrubbed				
Existing	-	-	-	-
NSPS	-	-	-	-
ANSPS	19.186	(90.0)	36.297	(90.0)
Capacity Partially Scrubbed				
Existing	1.994	(27.7)	1.987	(27.8)
NSPS	9.313	(56.6)	9.309	(55.1)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	1.994	(27.7)	1.987	(27.8)
NSPS	9.313	(56.6)	9.309	(55.1)
ANSPS	19.186	(90.0)	36.297	(90.0)
National				
Capacity Fully Scrubbed				
Existing	4.800	(90.0)	5.205	(90.0)
NSPS	-	-	-	-
ANSPS	113.207	(90.0)	243.399	(90.0)
Capacity Partially Scrubbed				
Existing	25.202	(68.2)	25.272	(65.4)
NSPS	30.309	(53.7)	30.730	(52.2)
ANSPS	-	-	-	-
Total Capacity Scrubbed				
Existing	30.002	(82.2)	30.477	(69.6)
NSPS	30.309	(53.7)	30.730	(52.2)
ANSPS	113.207	(90.0)	243.399	(90.0)

SLUDGE GENERATED
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^3 tons)

	1990	1995
New England	895.3	840.4
Middle Atlantic	3,653.4	5,624.2
South Atlantic	7,703.7	14,872.7
EAST	12,252.4	21,337.3
EAST NORTH CENTRAL	4,379.3	7,150.5
EAST SOUTH CENTRAL	6,962.0	10,407.5
WEST NORTH CENTRAL	1,314.5	2,650.8
WEST SOUTH CENTRAL	5,164.1	8,369.3
Mountain	2,990.7	4,754.1
Pacific	155.7	424.7
WEST	3,146.4	5,178.8
TOTAL	33,218.6	55,093.9

UTILITY CAPITAL COSTS*
UNDER ALTERNATIVE STANDARD OF 90% REMOVAL WITH WASHING CREDITS; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^9 $'s)
(using 1978 dollars)

	1990	1995
National		
New Generation Capacity	293.9	459.2
Nuclear (GW)	140.2 (128.2)	211.3 (192.8)
Coal (GW)	136.6 (193.0)	229.1 (323.2)
NSPS	56.8 (79.8)	56.8 (79.8)
ANSPS	79.8 (113.2)	172.2 (243.4)
Oil/Gas	17.1 (49.8)	18.8 (53.7)
Combined Cycle (GW)	1.7 (3.7)	2.8 (6.1)
Turbine (GW)	15.4 (46.0)	16.0 (47.6)
Long Distance Transmission	6.3	6.8
Local Transmission and Distribution	179.1	269.7
Scrubbers (GW)	22.8 (167.8)	41.6 (298.9)
NSPS	2.9 (30.3)	2.9 (30.7)
ANSPS	16.3 (113.2)	35.1 (243.4)
Retrofit	3.6 (24.3)	3.6 (24.8)
Conversion to Western Coal	0.1	0.1
Total	502.3	777.3
Average Plant Cost		
Nuclear	1,093.6	1,096.0
Coal		
NSPS	712.7	712.7
ANSPS	704.6	707.6
Total	707.9	708.9
Oil/Gas		
Combined Cycle	456.1	459.3
Turbines	335.3	335.2
Total	344.4	349.3
Average Scrubber Cost		
NSPS	96.1	94.8
ANSPS	143.9	144.3
Retrofit	148.7	145.8
Total	136.0	139.3

(GW) -- Gigawatts.

* Gigawatts figures represent capacity built after 1975 rather than total.

CHANGE IN INCREMENTAL ANNUALIZED COST OF ELECTRICITY* UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(Percentage Change in Rates from Current Standard)
(10^6 $'s)
(1978 $'s)

	1990		1995	
New England	5.7	(0.12)	20.2	(0.34)
Middle Atlantic	20.2	(0.68)	166.8	(1.25)
South Atlantic	313.7	(1.02)	835.9	(2.31)
EAST	339.6		1,022.9	
EAST NORTH CENTRAL	390.9	(0.75)	1,087.2	(1.59)
EAST SOUTH CENTRAL	207.4	(1.13)	424.4	(2.11)
WEST NORTH CENTRAL	103.0	(1.88)	(454.5)	(2.44)
WEST SOUTH CENTRAL	424.7	(3.64)	1,239.8	(4.99)
Mountain	(51.4)	(2.98)	447.0	(4.34)
Pacific	520.6	(3.08)	337.7	(2.21)
WEST	469.2		784.7	
Total Annualized Cost	1,935.0	(1.44)	4,104.2	(2.38)
Present Value of Change in Annualized Cost	21,929.8		41,375.5	
Objective Function	1,918.0		4,255.0	
Present Value of Change in Objective Function	21,863.0		42,812.1	

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* Individual regional estimates can be distorted by changes in transmission between regions, causing anomalies such that costs or emissions decrease in one region while they increase in all others.

CHANGE IN SO_2 EMISSIONS RELATIVE TO CURRENT* STANDARD UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU CEILING
WET SCRUBBING
(10^3 tons)

	1990	1995
New England	6.6	19.7
Middle Atlantic	168.5	253.3
South Atlantic	190.5	501.4
EAST	365.6	774.4
EAST NORTH CENTRAL	(160.3)	(171.2)
EAST SOUTH CENTRAL	181.5	354.6
WEST NORTH CENTRAL	151.9	417.0
WEST SOUTH CENTRAL	553.6	942.5
Mountain	381.7	531.2
Pacific	50.6	255.4
WEST	432.3	786.6
TOTAL	1,524.4	3,103.9

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* Individual regional estimates can be distorted by changes in transmission between regions, causing anomalies such that costs or emissions decrease in one region while they increase in all others.

CHANGE IN ANNUALIZED COSTS PER TON REMOVED UNDER ALTERNATIVE STANDARD OF 90 PERCENT REMOVAL WITH WASHING CREDIT; 1.0 LBS. SO_2/MMBTU CEILING WET SCRUBBING ($/ton)

	1990	1995
EAST	928.9	1,320.9
CENTRAL	1,549.5	1,488.7
WEST	1,085.4	985.1
TOTAL	1,269.4	1,322.3

Change in costs between current NSPS (i.e., 1.2 pounds) and ANSPS divided by change in emissions.

DRAFT
May 30, 1979

THE FINAL SET OF ANALYSES OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR NEW COAL-FIRED POWERPLANTS

APPENDIX D

BRIEF SUMMARY OF 2010 FORECASTS

ICF INCORPORATED

DRAFT
May 30, 1979

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SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

Dry Scrubbing

	Base Case			0.55 lbs. SO_2/MMBtu Emission Limitation			90% Removal With Washing Credit, 0.55 lbs. SO_2/MMBtu Ceiling		
	1990	1995	2010	1990	1995	2010	1990	1995	2010
National SO_2 Emissions (10^6 Tons/Year)									
Oil/Gas	1.77	1.01	0.20	1.82	1.24	0.20	1.93	1.45	0.21
Coal	19.92	22.81	20.60	18.22	19.18	10.69	17.73	18.53	9.05
Existing	14.27	13.74	-	14.52	14.00	-	14.44	13.98	-
NSPS	2.03	2.03	1.81	2.24	2.25	2.13	2.12	2.31	2.43
ANSPS	3.62	7.03	18.78	1.46	2.93	8.56	1.16	2.25	6.62
Total	21.69	23.82	20.80	20.04	20.42	10.89	19.66	19.99	9.26
Present Value of National SO_2 Emissions (10^6 Tons)									
Regional SO_2 Emissions (10^6 Tons/Year)									
East	7.00	7.67	6.93	6.47	6.57	3.34	6.41	6.54	2.95
East North Central	5.62	5.71	3.54	5.54	5.51	1.81	5.56	5.57	1.93
East South Central	3.19	3.52	2.66	2.87	2.97	1.35	2.90	2.99	1.33
West North Central	2.41	2.60	2.50	2.43	2.46	1.43	2.30	2.28	1.04
West South Central	2.16	2.62	3.30	1.74	1.78	1.87	1.59	1.66	1.44
West	1.30	1.69	1.85	1.00	1.13	1.10	0.89	0.94	0.56
Total	21.69	23.82	20.80	20.04	20.42	10.89	19.66	19.99	9.26
National SO_2 Emissions Rate (lbs./10^6 Btu)									
Oil/Gas	0.884	0.780	0.260	0.858	0.799	0.260	0.825	0.809	0.260
Coal	1.989	1.805	1.139	1.833	1.539	0.585	1.802	1.494	0.489
Existing	2.848	2.907	-	2.818	2.917	-	2.810	2.895	-
NSPS	1.119	1.120	1.120	1.119	1.200	1.127	1.114	1.119	1.107
ANSPS	1.135	1.154	1.141	0.523	0.518	0.523	0.416	0.407	0.403
Total	1.806	1.710	1.103	1.661	1.457	0.572	1.614	1.407	0.476
Regional SO_2 Emissions Rate (lbs./10^6 Btu)									
East	1.813	1.749	1.168	1.643	1.476	0.560	1.621	1.458	0.487
East North Central	2.475	2.364	1.169	2.401	2.226	0.593	2.403	2.222	0.580
East South Central	2.139	1.957	1.159	1.968	1.641	0.578	1.951	1.646	0.569
West North Central	2.401	2.144	1.132	2.493	2.112	0.618	2.238	1.923	0.495
West South Central	1.150	1.188	1.146	0.921	0.805	0.646	0.851	0.736	0.482
West	0.864	0.887	0.742	0.666	0.595	0.441	0.585	0.482	0.281
Total	1.806	1.710	1.103	1.661	1.457	0.572	1.614	1.407	0.476
Oil/Gas Consumption (10^{15} Btu/Year)									
Powerplants	3.998	2.590	1.550	4.246	3.102	1.550	4.680	3.589	1.580
Coal Transportation	0.291	0.369	0.527	0.276	0.354	0.528	0.276	0.357	0.500
Total	4.289	2.959	2.077	4.522	3.456	2.078	4.956	3.946	2.080

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS

Dry Scrubbing

	Base Case			0.55 lbs. SO_2/MMBtu Emission Limitation		
	1990	1995	2010	1990	1995	2010
Change in Annualized Cost						
Absolute ($10^9/Year)	-	-	-	1.53	3.04	8.00
Percentage	-	-	-	1.13	1.75	-
Change in Present Value of Annualized Costs ($10^9)	-	-	-	17.32	30.92	60.60
Change in Annualized Cost Per Ton Removed ($/Ton)						
Case Year Basis	-	-	-	927.9	895.2	807.5
Coal Production (10^6 Tons/Year)						
Appalachia	434.5	524.4	707.9	425.3	484.5	679.6
Midwest	329.9	391.0	468.9	364.9	444.5	540.6
Northern Great Plains	477.2	629.7	921.9	433.2	589.2	909.9
West	203.3	221.6	295.4	207.3	226.5	290.9
Total	1,445.0	1,766.6	2,394.1	1,430.6	1,744.7	2,421.1
Western Coal Consumed in East (10^6 Tons/Year)	93.7	98.5	122.7	65.4	73.4	80.1
Coal-Fired Generation Capacity (GW)	410.4	553.6	882.2	401.6	537.1	882.3
Cumulative Utility Capital Expenditures ($10^9)	500.0	770.3	1,793.2	500.3	752.8	1,825.6
Scrubber Capacity (GW)						
Existing	5.7	5.7	-	5.7	5.7	-
Retrofit	49.0	49.7	-	49.4	49.7	-
NSPS	34.7	34.3	34.5	32.4	34.9	34.5
ANSPS	55.8	114.4	448.0	123.2	258.75	801.8
Full	-	0.2	18.9	39.8	73.7	297.4
Partial (% Removal)	55.8 (61.1)	114.2 (63.6)	429.1 (63.6)	83.4 (61.1)	185.0 (59.0)	504.4 (60.5)
East	26.1	62.5	208.1	22.9	52.0	134.6
East North Central	2.4	9.2	79.3	9.1	16.1	82.8
East South Central	8.8	24.5	65.6	7.2	12.4	25.8
West North Central	-	-	10.1	7.4	17.0	79.2
West South Central	9.2	9.2	36.7	15.1	48.4	104.2
West	9.2	8.8	29.3	19.5	37.9	77.3
Total	145.2	204.1	482.5	210.7	349.1	836.3
Sludge Generated (10^6 Tons/Year)	19.3	26.5	62.6	25.6	37.2	91.0
Energy Penalty (10^{15} Btu/Year)	-	-	-	0.11	0.17	0.38

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE
PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS
Dry Scrubbing (Continued)

	90% Removal With Washing Credit, 0.55 lbs. SO_2/MMBtu Ceiling		
	1990	1995	2010
Change in Annualized Cost			
Absolute ($\$10^9$/Year)	2.32	4.70	14.10
Percentage	1.72	2.71	-
Change in Present Value of Annualized Costs ($\$10^9$)	26.26	47.64	103.96
Change in Annualized Cost Per Tons Removed ($/Ton)			
Case Year Basis	1,140.4	1,227.0	1,222.1
Coal Production (10^6 Tons/Year)			
Appalachia	402.2	468.0	663.1
Midwest	389.0	468.4	659.2
Northern Great Plains	457.1	646.4	874.4
West	183.7	181.5	251.4
Total	1,432.0	1,764.3	2,448.0
Western Coal Consumed in East (10^6 Tons/Year)	60.8	73.2	49.6
Coal-Fired Generation Capacity (GW)	389.9	520.1	879.8
Cumulative Utility Capital Expenditures ($\$10^9$)	500.3	776.1	1,875.1
Scrubber Capacity (GW)			
Existing	5.7	5.7	-
Retrofit	44.6	44.2	-
NSPS	32.7	33.3	34.5
ANSPS	110.8	241.0	798.6
Full	110.8	241.0	798.6
Partial (% Removal)	-	-	-
East	-	-	-
East North Central	-	-	-
East South Central	-	-	-
West North Central	-	-	-
West South Central	-	-	-
West	-	-	-
Total	193.8	324.1	833.1
Sludge Generated (10^6 Tons/Year)	34.5	54.8	135.0
Energy Penalty (10^{15} Btu/Year	0.33	0.55	1.07

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS IN 2010

LOWER NUCLEAR CAPACITY

	Base Case	0.55 lbs. SO_2/MMBtu Emission Limitation	90% Removal With Washing Credits and 0.55 lbs. SO_2/MMBtu Ceiling
National SO_2 Emissions (10^6 Tons/Year)			
Oil/Gas	0.20	0.20	0.22
Coal	27.78	14.00	11.20
Existing	-	-	-
NSPS	1.81	2.18	2.41
ANSPS	27.98	11.83	8.79
Total	27.98	14.20	11.42
Present Value of National SO_2 Emissions (10^6 Tons)			
Regional SO_2 Emissions (10^6 Tons/Year)			
East	8.89	4.17	3.56
East North Central	4.53	2.36	2.65
East South Central	3.85	1.91	1.85
West North Central	3.44	1.84	1.14
West South Central	4.25	2.32	1.64
West	3.01	1.60	0.71
Total	27.98	14.20	11.42
National SO_2 Emissions Rate (lbs./10^6 Btu)			
Oil/Gas	0.260	0.260	0.260
Coal	1.144	0.569	0.449
Existing	-	-	-
NSPS	1.110	1.123	1.110
ANSPS	1.146	0.522	0.390
Total	1.116	0.560	0.442
Regional SO_2 Emissions Rate (lbs./10^6 Btu)			
East	1.175	0.556	0.469
East North Central	1.163	0.581	0.569
East South Central	1.171	0.572	0.550
West North Central	1.161	0.597	0.407
West South Central	1.158	0.626	0.429
West	0.819	0.435	0.186
Total	1.116	0.560	0.442
Oil/Gas Consumption (10^{15} Btu/Year)			
Powerplants	1.550	1.556	1.675
Coal Transportation	0.644	0.647	0.631
Total	2.194	2.203	2.306

SUMMARY OF FORECASTED EFFECTS OF ALTERNATIVE NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED POWERPLANTS IN 2010

LOWER NUCLEAR CAPACITY

	Base Case	0.55 lbs. SO_2/MMBtu Emission Limitation	90% Removal With Washing Credits and 0.55 lbs. SO_2/MMBtu Ceiling
Change in Annualized Cost			
Absolute ($$10^9$/Year)	-	10.22	18.94
Percentage	-	-	-
Change in Present Value of Annualized Costs ($$10^9$)	-	74.39	130.97
Change in Annualized Cost Per Ton Removed ($/Ton)			
Case Year Basis	-	742.0	1,143.3
Coal Production (10^6 Tons/Year)			
Appalachia	859.3	845.3	827.8
Midwest	581.2	657.8	793.0
Northern Great Plains	1,207.0	1,180.3	1,125.0
West	341.8	338.5	303.9
Total	2,989.4	3,022.0	3,049.7
Western Coal Consumed in East (10^6 Tons/Year)	146.6	98.9	74.7
Coal-Fired Generation Capacity (GW)	1,106.7	1,106.2	1,099.3
Cumulative Utility Capital Expenditures ($$10^9$)	1,722.7	1,765.9	
Scrubber Capacity (GW)			
Existing	-	-	-
Retrofit	-	-	-
NSPS	34.5	34.5	33.9
ANSPS	591.0	1,025.8	1,018.2
Full	25.9	400.6	1,018.2
Partial (% Removal)	565.1 (63.6)	625.2 (61.5)	-
East	233.2	193.0	-
East North Central	110.6	83.5	-
East South Central	105.5	28.8	-
West North Central	26.8	103.3	-
West South Central	54.5	106.3	-
West	34.5	110.4	-
Total	625.5	1,063.3	1,052.1
Sludge Generated (10^6 Tons/Year)	89.14	131.4	178.7
Energy Penalty (10^{15} Btu/Year	-	0.61	1.47

SO_2 SCRUBBER COST ESTIMATES
CURRENT NSPS, 1.2 LBS SO_2/MMBTU
DRY SCRUBBING

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	1.2	1.2	1.2	1.2	1.2	1.2
B. Percent Annual SO_2 Removed	-	-	28	64	76	82
C. Percent of Gas Treated	-	-	31	71	84	91
D. Daily SO_2 Removed (lbs./10^6 Btu)	-	-	-	-	-	-
E. Annual SO_2 Removed (lbs./10^6 Btu)	-	-	.46	2.2	3.8	5.4
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber	-	-	46.00	78.00	88.95	100.95
2. Sludge Pond	-	-	0.95	2.75	4.25	4.85
3. Total	-	-	46.95	80.75	93.20	105.80
B. O&M (Mills/KWH)	-	-	0.85	1.55	2.10	2.50
C. Capacity Penalty (%)	-	-	0.15	1.95	2.30	2.48
D. Energy Penalty (%)	-	-	0.15	1.95	3.05	3.60

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
0.55 LBS SO_2/MMBTU ANNUAL EMISSION LIMITATION
DRY SCRUBBING

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.40	0.54	0.54	0.54	0.54	-
B. Percent Annual SO_2 Removed	50	55	67	84	89	-
C. Percent of Gas Treated	100	100	100	93	99	-
D. Daily SO_2 Removed (lbs./10^6 Btu)						
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.40	0.66	1.12	2.79	4.46	-
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber				96.10	108.10	-
2. Sludge Pond				3.65	5.20	-
3. Total	32.13	32.13	38.48	99.75	113.30	-
B. O&M (Mills/KWH)	1.27	1.27	1.69	2.04	2.50	-
C. Capacity Penalty (%)	0.50	0.50	0.50	2.60	2.65	-
D. Energy Penalty (%)	-	-	-	3.75	4.32	-

Source: EPA, for a new 500 MW powerplant.

SO_2 SCRUBBER COST ESTIMATES
90% REMOVAL WITH WASHING CREDITS;
0.55 LBS SO_2/MMBTU CEILING
DRY SCRUBBING

	$SO_2/10^6$ Btu (Long-Term Average)					
Scenario Specifications	0.8	1.2	1.66	3.33	5.0	6.6
A. Annual SO_2 Emission Limitation (lbs./10^6 Btu)	0.08	0.12	0.17	0.39	0.54	-
B. Percent Annual SO_2 Removed	90	90	90	84	89	-
C. Percent of Gas Treated	100	100	100	98	-	-
D. Daily SO_2 Removed (lbs./10^6 Btu)	0.99	1.48	2.05	4.02	-	-
E. Annual SO_2 Removed (lbs./10^6 Btu)	0.72	1.08	1.50	2.94	-	-
Scenario Cost (1978 $'s)						
A. Capital ($/KW)						
1. Scrubber	105.00	105.60	106.10	106.60	108.10	-
2. Sludge Pond	2.00	2.40	2.75	3.90	5.20	-
3. Total	107.00	108.00	108.85	110.50	113.30	-
B. O&M (Mills/KWH)	1.75	1.85	1.92	2.40	2.50	-
C. Capacity Penalty (%)	2.75	2.75	2.75	2.68	2.65	-
D. Energy Penalty (%)	4.35	4.35	4.35	4.30	4.32	-

Source: EPA, for a new 500 MW powerplant.